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THE DIARY OF A NEW ENGLAND ORNITHOLOGIST

An Appreciation.

(Read before the Wilson Ornithological Club at Chicago, December 28, 1916.)

W. F. HENNINGER.

A few years ago a letter came to my desk, asking me whether I would like to consider buying a small collection of birds. Upon my answer that I would have to have the exact data I heard no more until this fall. Then I received the answer that the data were all given and thus the collection passed into my hands together with the book, that was to contain these data. Naturally when unpacking the specimens and checking them off I saw that the collection had but little *financial* value. A specimen of *Pheugopedius maculipectus* attracted my attention only because it had belonged to the collection of John Cassin and a specimen of *Wilsonia citrina* because it originally belonged to Dr. E. A. Mearns. Running over the Warblers in the collection I came across the name on the checklist: "Whitethroated Warbler." Knowing that the Cerulean is sometimes called by that name I looked for this species, but what was my surprise when the specimen found proved to be a *Vermivora leucobronchialis* of a very early date, July 3, 1875. I then paid close attention to those species of which there seemed to be only one specimen at hand. The very next one was a Cerulean and then a Kentucky Warbler, both from the New England States. To my memory came

a short note in the Auk, *the* Bird Journal of the Atlantic Coast, written about nine years ago and when I turned to the page I saw what had fallen into my hands. Consequently I turned to the book which had accompanied the skins and there found accurately recorded the ornithological life history of a man, who furnished many other men in the New England States in the past with splendid records of New England birds, and whose records are worthy to be retold or revealed. The collection, or what was left of it — 302 skins — thus proved to be of considerable *historical* value and it gives me great pleasure to show the most interesting ones of them to the members of the Wilson Club today, as I read to them from the records of the past, from the diary of Dr. Erwin I. Shores, the Ornithologist of Suffield, Connecticut.

The diary begins with statements of his childhood days back in 1862 and relates struggles with parental objections to the use of a gun, when he was only eight years old, the wrestling with questions of identification of birds, all things with which the most of us are familiar from our own reminiscences. Tenney's Manual, and in 1871, when the family lived in Haverhill, Mass., Johnson's Natural History, as also Maynard's Naturalist's Guide served him as his ornithological literature. There at Haverhill he also learned the art of taxidermy. Two good records from this time are still preserved in the diary, viz, the shooting of a Black-backed three-toed Woodpecker (*Picoides arcticus*) in October, 1871, at Bradford, along the river, but he says of this specimen: "it was so lousy, that I only kept his head and wing." In November of the same year a friend gave him a pair of little Auks (*Alle alle*) which were shot on Kenoza lake, which he mounted and still had at a very late date. In August, 1872, the family moved to Suffield, Conn., and in September of the same year he entered Brown University and there became acquainted with Professor J. W. P. Jenks. Through him he became still more interested in birds and received permission from his parents to accompany the Professor on a winter trip to Florida. The trip I wish to give in his own words. He writes as follows:

"Our party consisted of Professor Jenks, Fred Jenks and myself. On the way to our real starting point Fred and I shot several birds, but kept very few. Saw a few gulls and ducks on the way to Savannah, but lost them. Saw plenty of ducks after we passed Cape Hatteras. Our next shooting was at Sand Point on the Indian river. There we got several birds. Among them I remember a mockingbird that Fred got and a Fish Hawk and a Broad-winged Hawk that I got. At Sebastian Creek I got a Pigeon Hawk and eighteen other birds and Fred got a pair of Carolina Doves and twenty birds. On the way down Indian River we had shot at a number of birds. At Ft. Capron we met Mr. Ober and Mr. Van Buskirck and they went with us to the interior. While at Ft. Capron went gunning several times and shot a bag full each time, but turned nearly all over to Professor Jenks, keeping for myself only the following, all of which were obtained along the river's bank North of Ft. Capron, but within five miles of it. This list is as follows:

Ft. Capron, Florida, February 11, 1874.

1. Bahama Honey Creeper (*Coereba bahamensis*) ♂.—(Aside of this record are written the sad words, "lost in mail 1878." Sad, I say, because I want the Club to remember that this is by far the northermost record of this species in the United States, all others being from the Florida Keys, principally Indian Key. This record must be all of 200 miles farther north and thus the credit for the northermost record of this species must go to this youthful ornithologist, then 19 years of age, Dr. Shores.)
2. Cardinal Redbird, one ♂.

February 12.

3. Yellow-throated Gray Warbler (*Dendroica dominica*) ♂.
4. Nonpareil (*Passerina ciris*) ♀.
5. Stone Snipe (*Totanus melanoleucus*) ♂.
6. Bonaparte's Gull (*Larus philadelphicus*) ♂.
7. Royal Tern (*Sterna maxima*) ♂.

(Numbers 3, 4 and 5 are now in my collection.—W. F. H.).

My first shot at Ft. Capron killed a Fish Crow and a Turkey Buzzard. From that place we started for Okeechobee and breaking down on the way we left Professor and Fred behind.

Killdeers, Meadowlarks, Quail, Deer, Raccoons, Fox Sq., Wild Turkeys, a Wildcat, Alligators and Snakes were common all the way to the Kissimee River. Besides these I killed numerous smaller birds, but had no time to skin them. At Cowboy camp, on February 19th, I killed a pair of Ivory-billed Woodpeckers in the morning, but had no time to skin them then, as the camp was moved that day, so put them in the boat and at night when we reached camp they were spoiled. At Ft. Bassanger there were plenty of birds and game and though I shot much it went into our stomachs and I preserved no skins. On the way down the river Snake birds, Herons, Gallinules were abundant, but nearly all I shot were "gators." On the island in Okeechobee there were thousands of nests of Herons and a few of Roseate Spoonbills. When we came the Herons left and the crows came and destroyed their eggs. In the lake I was taken with fever and ague.—" On the rest of the trip he could not do much, mentioning only, that he again meets Professor Jenks and Fred, to whom he turned over the box of eggs he had collected, and that at a Pelican rookery at the Sebastian River he killed six Brown Pelicans with one shot, but could only keep their plumes as he was too sick to prepare any specimens. The effects of this trip made itself felt in two ways. First it kept him in poor health for some time, secondly he became determined to have a collection of his own and started out to do so most vigorously. Several articles from his pen appeared in later years in regard to the camp life in Florida and some of his experiences there, but that was all he ever wrote about it and he never published anything over his own name in ornithological literature. The records from 1874 in his diary's shooting list up to 1880 in the fall are very complete except the last few years when he went to school, most likely some medical college. In the fall of 1880 he moved to West Bridgewater in eastern Massachusetts. There he lived till the summer of 1885, moving to Hampton, Virginia. The entries in the diary at the last named place are of no peculiar or particular value except in one instance to be mentioned later on. His life's work as an Orni-

thologist was in Suffield, Conn. and West Bridgwater, Mass. In giving the work for this period I have considered it best to take up the various families of North American birds and point out anything that may be of interest. Suffield, West Suffield, and Enfield, Conn., are located in that part of Connecticut where the Connecticut River enters the state from Massachusetts, and his work sometimes carried him across the line into Massachusetts, besides he made several trips to Rhode Island. This naturally makes his list of water and shorebirds very small.

RECORDS.

Order *Pygopodes.*

The record for the Dovekie (*Alle alle*) has already been given. The only other one worth mentioning is from West Bridgwater, Mass., on November 1, 1882, two ♀♀ juveniles, of *Gavia stellata*, shot in Plymouth, Mass., on October 28, 1882, and presented to him in the flesh by Chas. Thayer.

Order *Longipennes.*

Most of the records for the birds of this order are from Hampton, Va., and are for birds we naturally would expect to meet there. Of the Massachusetts records there is one of interest, a specimen of the Parasitic Jaeger (*Stercorarius parasiticus*), a ♀ juvenile, shot at Plymouth, Mass., on October 22, 1884, and presented to him in the flesh by F. Mitchell.

Order *Anseres.*

Not many records for ducks and geese are given. He only got one specimen of the Wood Duck (*Aix sponsa*) on October 26, 1880, at West Bridgwater, Mass., and states that its crop had two large acorns and its gizzard was full of cracked acorns, small stones and sand. His record for the Blue-winged Teal is April 21, 1876, at Suffield, and occasionally he mentions finding the Black Duck. The other specimens were obtained mostly in the Boston markets and taken in that neighborhood.

Order *Herodiones.*

He mentions the Great Blue Heron as fairly common, the Bittern as not nearly so common, the Green Heron as common, the following stomach contents being noted: One ♂ shot August 6, 1879, had a frog and a mass of crickets and grasshoppers in his stomach, one ♀ on August 11, 1879, had a mass of water-beetles in her stomach. Of the Black-crowned Night Heron (*Nycticorax n. naevius*),

however, he only took one specimen—a ♀, in the juvenile plumage on July 24, 1875, in the Big Brook woods, thus showing that this species must be rather rare in that region.

Order *Paludicolae.*

He has several records for the Sora, but only one specimen actually taken August 9, 1875, at Suffield, Conn., a ♂ (now in coll. W. F. H.). Otherwise only the Coot is mentioned of this Order.

Order *Limicolae.*

The Woodcock and Wilson's Snipe are mentioned, but only one specimen of each was in his collection (now in coll. W. F. H.). The Least and Spotted Sandpiper as well as the Bartramian Sandpiper were common in those days and specimens of all these are in the collection. August 4, 1875, was a red letter day for him. He went to Saulsbury Beach to visit some friends, borrowed a gun and rowed over to Plum Island at the mouth of the Merrimac River in Massachusetts and took a specimen each of the Willet (*Catoptrophorus semipalmatus*), of the Yellow-legs (*Totanus flavipes*), of the Red-backed Sandpiper (*Pelidna alpina sakalina*), of the Pectoral Sandpiper (*Pisobia maculata*), all of which are now in my collection, and a bunch of Least and Semipalmated Sandpipers, which they had for supper. The Solitary Sandpiper is fairly common according to his notes, but the Killdeer rather rare, one record being given a pair taken May 22, 1880, at Suffield, Conn. This last record must be added to those given by Sage and Bishop.

Order *Gallinae.*

The Quail (*Colinus virginianus*) is mentioned by him and the Ruffed Grouse; the specimens of Spruce Grouse he had he obtained from Northern Vermont.

Order *Columbae.*

He has a number of records for the Passenger Pigeon (*Ectopistes migratorius*) June 19, 1874, a specimen shot in the front yard of the home farm, June 16, 1875, a pair seen, August 30, 1879, a ♀ shot had been feeding on blackberries and elderberries, and at the Southwick Ponds in Massachusetts, in July, 1880, he finds several on July 16, and one on July 20. After that there are no more records.

Order *Raptores.*

Among the Hawks there are no exceptional records, but some of the observations and stomach records are worthy of note. Thus he mentions a specimen of *Buteo borealis* feeding on *Lepus sylvaticus* on February 28, 1882, at West Bridgwater, Mass., the stomach contents of a *Buteo lineatus* on August 24, 1875, at Suffield,

Conn., as a large light green worm with light and reddish bands across it with a long horn, black on top and green below, a dozen or more large locusts and a small green snake, a small frog and four black ground beetles. A winter record of *Accipiter velox* is December 30, 1878. The contents of stomach of an *Accipiter velox* taken September 12, 1877, were the bill of a Yellow-billed Cuckoo, while the stomachs of all Sparrow Hawks contained mice. Twice does he mention how Hawks have darted down and taken away the bird he had just killed, in each case it being Cooper's Hawk, and on one of these occasion he managed to kill the thief. The Marsh Hawk he finds but once, and of other Hawks only the Bald Eagle is met with, especially at the Southwick Ponds, Mass., in July and August, 1880.

Among the Owls he notes the stomach contents of a Screech Owl taken July 21, 1879, as having dorrbugs (whatever that may be) and parts of a Chipmunk, while all others had mice. On May 25, 1877, he shot a pair of Great Horned Owls with both of the young. Stomach contents: the ♀ had skunk, the ♂ a Red Squirrel, the young each a mouse and the skunk's fur. His best record, however, is a Hawk Owl (*Surnia ulula caparoch*) obtained in the Boston markets in December, 1877, shot on Salem Beach, having a mouse in its stomach. As there are only fourteen records for this owl in Massachusetts it constitutes the fifteenth one, or rather the tenth one, in order. The Long-eared and Short-eared Owls are also mentioned by him.

Orders *Coccyges* and *Alcyones*.

Both species of cuckoos are mentioned, though the Blackbilled one is the more common of the two. The Kingfisher is mentioned as common and several observations on his mode of fishing are made, that he dives down quite deep to catch his prey and that he breaks the backbone of the fish and swallows it doubled up.

Order *Pici*.

The record for *Picoides arcticus* has been mentioned. The Flicker, the Hairy and Downy Woodpeckers are all noted as common. His specimens of the Pileated Woodpecker came from Northern New York and Vermont. Of the Yellow-bellied Sapsucker (*Sphyrapicus varius*) he has but one record, a ♂ taken September 9, 1874, at Rehoboth, Mass. (coll. W. F. H., No. 1395). We know today that this species is a rare breeder in the mountains of Massachusetts and his record must have been of some value in those days, since it does not seem to be established as a breeder there till in the eighties of the past century. The greatest rarity, however, is the specimen of *Centurus carolinus*, the Red-bellied Wood-

pecker, a ♀ taken July 30, 1874, at Suffield, Conn. (coll. W. F. H., No. 1394). This is the specimen mentioned by Merriam in Trans. Conn. Ac. Sci. IV, 1877, 65, and is the only indisputable specimen taken in Connecticut, as Linsley only saw one, and no one seems to know anything definite about the one killed by Dr. Crary at Hartford and the date of its capture. Dr. Shores' specimen is likewise the first one taken in New England.

Order *Macrochires.*

The Whip-poor-will, Nighthawk, Ruby-throated Hummer and Chimney Swift are all well known birds of this region. Of the latter species he has one shot July 21, 1879, at Suffield, Conn., (Coll. W. F. H., No. 1422), a ♂ that had three testicles, two of the usual size, and on the right side another from the same duct about two-thirds the size of the other, certainly an interesting specimen anatomically.

Order *Passeres.*

Family *Tyrannidae.*

Kingbird (*Tyrannus tyrannus*).—Common. Migration dates: May 12, 1876, and May 11, 1884.

Crested Flycatcher (*Myiarchus crinitus*).—A rare bird in that region. He took only four speciments, two of which I now have, a ♂ taken September 10, 1877, and a ♀, taken May 17, 1877 (Coll. W. F. H., Nos. 1400 and 1401).

Phœbe (*Sayornis phœbe*).—Common. Migration dates: April 21, 1875; April 12, 1876; April 23, 1877; April 7, 1882; April 4, 1883; March 27, 1884. The specimen taken April 21, 1875, a ♂, had some long white worms just in front of the eye similar to those found in the Snake Bird (*Anhinga anhinga*).

Olive-sided Flycatcher (*Nutallornis borealis*).—Rare. Dr. Shores took only one specimen of this bird, a ♂, on August 5, 1874, at Suffield, Conn. (Coll. W. F. H., No. 1560). This is the first specimen ever taken in Connecticut (Sage and Bishop, Birds of Conn., p. 102).

Wood Pewee (*Myiochanes virens*).—Common summer resident.

Yellow-bellied Flycatcher (*Empidonax flaviventris*).—Rather rare. Mr. Shores took ten specimens of this species, and I believe the earliest records from the state, since Sage and Bishop mention only one earlier, August 21, 1876, a pair (♂ in Coll. W. F. H., No. 1562 and ♀, No. 1563); May 25, 1877, two males (one ♂ in Coll. W. F. H., No. 1564); May 17, 1877, a ♂; June 4, 1878, a ♀; August 30, 1879, a ♂; September 1, 1879, a ♂; September 4, 1879, a ♀; September 10, 1879, a ♀.

Empidonax minimus.—Common. Migration dates: May 4, 1876; May 9, 1877; May 5, 1882; May 12, 1883.

Empidonax virescens.—One specimen taken, a ♂, June 24, 1874, at Suffield, Conn. (Coll. W. F. H., No. 1551). The A. O. U. check-list credits this species with breeding casually in Connecticut and once in Massachusetts. Ridgway (Birds of North and Middle America) credits it with a breeding record at Hyde Park, Mass., 1888, but does not mention Connecticut at all, although under the bibliographical references it is mentioned from that state (Merriam, Trans. Conn. Ac. Sci. IV, 1877). Evidently Dr. Shores' record is the first one from Connecticut, and also for the New England states, and the late June date makes it possible that it bred there as it did so in later years. (Sage and Bishop, B. of C., p. 104.) Another valuable specimen.

Of the next families, the Blue Jay, the Crow, the Bobolink, the Cowbird, the Red-winged Blackbird, the Purple Grackle, the Meadowlark, the Baltimore Oriole, the Rusty Blackbird are all common birds of that region. The Orchard Oriole (*Icterus spurius*) is rare and he mostly met with but one specimen each summer, with the exception of one, and took only six specimens all told, three of which are now in my collection. One Bobolink, a ♂, shot July 28, 1876, had grasshoppers and crickets in his stomach, and on June 15, 1875, he mentions finding a Red-winged Blackbird's nest that had two entirely light blue eggs without any markings and one with one black spot only on the large end. The Horned Lark was taken only at Providence, R. I., two ♂♂, one ♀, February 3, 1875, and November 13, 1875, a ♂ at Pawtucket, R. I.

Family *Fringillidae.*

Passer domesticus.—How uncommon the English Sparrow was in those days is shown by the remark under December 23, 1875: "Was at work skinning birds, when I heard a queer song, so went out and shot these two," viz. two ♀♀ of this species. Surely different from what we experience.

Pinicola enucleator leucura.—Met with occasionally February 22, 1875, at Rehoboth, Mass., December 21, 1875, at Suffield, Conn., December 6, 1882, and January 1 and 18, 1883, at West Bridgwater, Mass., and the next winter at the same place as common all winter.

Pine Siskin (*Spinus pinus*).—He has four records for this species, one ♂ taken November 24, 1874, a ♂ taken December 21, 1875, its crop full of frozen apples, and two ♂♂ taken December 30, 1878. January 2, 1879, a flock seen. These records are years earlier than any given by Sage and Bishop (B. of Conn., p. 122). The Purple Finch breeds in that region and the records are numerous.

Red Crossbill (*Loxia curvirostra minor*).—The only records are

Rehoboth, Mass., one male and two females on October 30, 1874, a pair being now in my collection.

Loxia leucoptera.—This rare straggler was taken on November 26, 1874, at Suffield, Conn., a male (Coll. W. F. H., No. 1480). This is a month earlier than the first record by Sage and Bishop, and hence the first one taken in Connecticut.

Redpoll (*Acanthis linaria*).—Common. On January 20, 21 and 22, 1875, he took 53 specimens. Sage and Bishop mention only one earlier occurrence, so that is the second record for the state.

Greater Redpoll (*Acanthis linaria rostrata*).—One specimen of Redpoll taken on January 20, 1875, at Suffield, Conn. I refer to this subspecies. Its measurements seem to come well within the range of this variety (length 5.70 and extent 9.10 in., wing 3.20, tail 2.25). This is three years sooner than the only record given by Sage and Bishop (Coll. W. F. H., No. 1467).

Snowflake (*Plectrophenax nivalis*).—One specimen taken, a ♂, on November 24, 1874, at Suffield, Conn. (Coll. W. F. H., No. 1413). Sage and Bishop's first record is two months later.

Of the other members of this family the Goldfinch, the Vesper, Savannah, White-throated, Tree, Chipping, Field, Song, Fox, and Swamp Sparrows, the Slate-colored Junco, the Towhee, the Rose-breasted Grosbeak, and the Indigo Bunting are all common.

Lapland Longspur (*Calcarius lapponicus*).—It sounds peculiar that this species is only met with once, a fine male in full plumage, taken in Suffield, Conn., November 24, 1874 (Coll. W. F. H., No. 1433). It evidently must be a very rare visitor in that region. Dr. Shores' record is the first specimen taken in Connecticut (S. and B., B. of C., p. 122).

Sharp-tailed Sparrow (*Passerherbulus caudacutus*).—There are only two records, one from Rhode Island, where the species is common, at Silver Springs, October 23, 1875, a male (Coll. W. F. H., No. 1581), and one female from Hampton, Va., October 22, 1886 (Coll. W. F. H., No. 1586), where the species is also common.

Grasshopper Sparrow (*Ammodramus savannarum australis*).—While this species breeds in Connecticut it seemed to be almost absent in that region, since there are only two records, a ♂ juvenile, taken July 6, 1874, at Enfield, Conn. (Coll. W. F. H., No. 1459) and May 29, 1878, a male taken at Suffield, Conn.

White-crowned Sparrow (*Zonotrichia leucophrys*).—A rare bird in this region. Only four records, a male taken at Silver Springs, R. I., October 23, 1875; a female taken at Suffield, Conn., May 20, 1876 (Coll. W. F. H., No. 229), and a ♀ taken May 23, 1876, at Suffield, Conn. (Coll. W. F. H., No. 351). A recent article states that this species is rare in all New England. May 14, 1877, a ♂ taken.

Lincoln Sparrow (*Melospiza lincolnii*).—Our fellow member, H. S. Hathaway, remarked on the rarity of this species in the "Osprey," March, 1899, p. 110, stating that only three had been taken in Rhode Island and similar conditions prevailed in Connecticut at the time when Dr. Shores worked there. The records are as follows: June 6, 1874, one taken; May 23, 1877, a male taken, "which had small straws in its mouth and acted as if it were near its nest, being very much less shy than usual" (Coll. W. F. H., No. 1476); June 2, 1877; June 23, 1877, and September 14, 1877, and May 14, 1877 (Coll. W. F. H., No. 1475); May 22, 1878, two males taken, and June 4, 1878. These records show that it bred there at the time, at least to all appearances. Mr. Shores' record of June 6, 1874, is the first record from Connecticut.

Family *Tangaridae*.

Summer Tanager (*Piranga rubra*).—This species is only known as a straggler in the New England states, but two of the very few records are furnished by Mr. Shores. A male July 21, 1876, of which he writes: "Was sitting in room reading when I happened to look out of the window and saw this bird in Miss Clark's yard. Got gun and shot out of the window." As this bird was mounted it may possibly still be in Mrs. Shores' possession, as she kept a case of mounted birds. The other record is from West Bridgwater, Mass., May 16, 1884, a male taken. Mr. Shores' record from Suffield is the first one taken in Connecticut.

The Scarlet Tanager is of course a common bird in the region of Connecticut.

Family *Hirundinidae*.

Purple Martin (*Progne subis*).—Not overly common. Migration dates: April 16, 1877; May 13, 1883.

Cliff Swallow (*Petrochelidon lunifrons*).—Migration dates: April 21, 1876; April 25, 1877; May 11, 1884. Common.

Barn Swallow (*Hirundo erythrogastra*).—Common. Migration dates: April 13, 1876; April 22, 1877; May 11, 1884.

Tree Swallow (*Iridoprocne bicolor*).—Common. Migration dates: April 22, 1877; April 8, 1882; April 19, 1883; March 24, 1884.

Bank Swallow (*Riparia riparia*).—Common along the river.

Rough-winged Swallow (*Stelgidopteryx serripennis*).—Only one specimen taken, a ♀ on June 6, 1874, at Suffield, Conn. This is the specimen mentioned by Purdie in Bull. Nutt. Orn. Club II, 1877, 21, and is the first specimen recorded from Connecticut and the second one ever taken in the New England states. This species has extended its range since those days and is now a fairly common breeder in Southern Connecticut (Coll. W. F. H., No. 1453). This specimen is not mentioned by Sage and Bishop.

The Cedar Waxwing was of course a common species there, but of the Northern Shrike there are very few records, a ♂ taken November 27, 1876, in Suffield, Conn. (Coll. W. F. H., No. 1366), and a ♀ taken February 28, 1880 at Suffield, which had a mouse in its stomach, and four seen during the winter of 1883 to 1884 at West Bridgwater, Mass.

Family *Vireonidae.*

The Red-eyed Vireo (*V. olivacea*) is the most common, followed by the Yellow-throated (*V. flavifrons*), the White-eyed (*V. griseus*), the Blue-headed (*V. solitarius*), and the Warbling (*V. gilvus*) in regular order of abundance, but there is only one record for the Philadelphia Vireo (*Vircosylva philadelphica*), a female taken September 10, 1879, at Suffield, Conn. This is always a rare species and this record constitutes apparently the first one for Connecticut It is now No. 1493, Coll. W. F. H. (Sage and Bish. Birds of Conn., p. 145).

Family *Mniotiltidae.*

Black and White Warbler (*Mniotilta varia*).—Common in this region. Migration dates: May 20, 1875; May 11, 1876; April 21, 1877; April 30, 1882; April 28, 1883; April 27, 1884. Fall dates: September 9, 1874; September 12, 1877; September 11, 1878.

Worm-eating Warbler (*Helmitheros vermivorus*).—Very rare. One specimen taken August 22, 1874, a male (Coll. W. F. H., No. 1611). This is the specimen mentioned by Merriam in the Trans. Conn. Acad. Sc. IV, 1877, 12, and is certainly the one mentioned by Purdie, Bull. Nutt. Orn. Club II, 1877, 21. No doubt the first specimen taken in North Connecticut, and at that time the northernmost one in New England.

Vermivora pinus.—This warbler is still reported as rare in Massachusetts. Dr. Shores took only one specimen, a male, May 27, 1878, at Suffield, Conn. (Coll. W. F. H., No. 1540).

Brewster's Warbler (*Vermivora leucobronchialis*).—This rare species was once taken by Mr. Shores July 3, 1875 (Coll. W. F. H., No. 1541), a male at Suffield, Conn. Second specimen taken in Connecticut, fourth specimen ever taken—there is one from Massachusetts, 1858, and one from Massachusetts, 1870, one from Connecticut, May 25, 1875.

Golden-winged Warbler (*Vermivora chrysoptera*).—Quite a number of records: June 17, 1875, a ♂ taken; July 7, 1876, a pair of adult and three young taken (a breeding record); August 7, 1878, two ♂♂ and one ♀ taken; August 10, 1878, two ♂♂ taken; August 14, 1878, three ♂♂♂ taken (two in Coll. W. F. H., Nos. 1503 and 1523), and June 9, 1879, a ♂ taken (Coll. W. F. H., No. 1504). Only one of these records given by Sage and Bishop.

Nashville Warbler (*Vermivora rubricapilla*).—Common. Migration dates: May 14, 1874; May 11, 1876; May 10, 1877; May 21, 1882; May 4, 1883; May 16, 1884. Fall: September 12, 1877.

Tennessee Warbler (*Vermivora peregrina*).—Sage and Bishop give this as a rare spring and fall migrant, but they only made use of one of Dr. Shores records, and that seems to be the first one for the state, June 8, 1875, a male taken (Coll. W. F. H., No. 1524); September 3, 1877, a ♀ juvenile; September 10, 1879, a pair (♀ in Coll. W. F. H., No. 1582); a ♀ September 1, 1879; a ♀ September 7, 1877; a pair September 2, 1879; a ♂ September 4, 1879; a ♂ September 5, 1879; a pair September 8, 1878 (a ♀ in Coll. W. F. H., No. 1525). These were the specimens taken by him.

Northern Parula Warbler (*Compsothlypis a. usneae*).—Common. No special records.

Cape May Warbler (*Dendroica tigrina*)—Sage and Bishop call this a *very* rare spring and fall migrant (B. of Conn. p. 153), but Dr. Shores took fourteen specimens, that is more than all the other Connecticut men put together, and he also took the first specimen in the state, May 28, 1875, a ♀; May 20, 1876, a ♂ (Coll. W. F. H., No. 1538); two ♀♀, May 23, 1876; a ♂, May 27, 1876; two ♂♂, September 1, 1879; a ♂, September 2, 1879 (Coll. W. F. H., No. 1539), and four ♀♀ on the same date (two in Coll. W. F. H., Nos. 1536 and 1537) ,and two ♂♂ on September 10, 1879. Only one of these records given by Sage and Bishop. It seems that I now have more specimens of this warbler (four) in my collection, taken in Connecticut, than any Connecticut man has at the present day.

Dendroica æstiva, *caerulescens* and *magnolia* are all common in that region.

Dendroica coronata.—Common. Two winter records given in the diary. January 2, 1879, a flock of about twenty seen, of which two ♂♂ were taken, and February 22, 1875, a ♂ taken. These records are not given in Sage's and Bishop's work and are many years prior to any winter records they do give.

Cerulean Warbler (*Dendroica caerulea*).—Exceedingly rare. One ♂ taken on June 12, 1875 (Coll. W. F. H., No. 1501). He says about this occurrence: "On my way home lay down under a tree by the road waiting for a ride and I thought I saw a Warbling Vireo, so shot and got a Blue Warbler." This was at West Suffield. This is the specimen mentioned by Ridgway (Birds of North and Middle America, Vol. II, p. 571), by Brewer Proc. Bost. Soc. N. H., XIX, 1878, 303, and also by Purdie Bull. Nutt. Orn. Club II, 1877, 21. Linsley's record from 1841 does not state whether a specimen was taken or not, hence is not to be considered in this connection, but there is one earlier one from Massachusetts. Thus Dr. Shores'

specimen is the first one taken in Connecticut and the second one taken in New England.

Dendroica pensylvanica, virens, Sciurus aurocapillus and *noveboracensis, Setophaga ruticilla, Wilsonia canadensis* and *Geothlypis trichas* are all common in that region, and there are no special records.

Black-poll Warbler (*Dendroica striata*).—This is the most common warbler of all in that region, Dr. Shores taking 116 specimens in all.

Bay-breasted Warbler (*Dendroica castanea*).—Dr. Shores found this is a very rare warbler and notes only three specimens taken, May 20, 1875, a ♂, May 21, 1877, a ♂ (Coll. W. F. H., No. 1478) and a ♂ May 23, 1878 (Coll. W. F. H., No. 1477).

Blackburnian Warbler (*Dendroica fusca*).—To the fall records given by Sage and Bishop must be added a male taken September 1, 1879 (now in Coll. W. F. H.), and one on September 10, 1879; to the summer records a male taken July 29, 1878. We find under this species the following remark, which will no doubt evoke a smile as we think of similar feelings in our life: "June 11, 1876, *Sunday*. This A. M. was sitting in my room reading, when on looking up I saw a sight that made me wish the people were not just going to meeting. Nine Blackburnian warblers in the elm! How I did want to shoot! But father said 'No,' and the people were passing thick, so I couldn't very well." Common.

Pine Warbler (*Dendroica vigorsi*).—Not common, as he took only nine specimens.

Yellow Palm Warbler (*Dendroica p. hypochrysea*).—Common. Two early spring records are April 17, 1876, and April 22, 1877.

Prairie Warbler (*Dendroica discolor*).—Decidedly rare. He took only three specimens, a ♂, June 16, 1875, and two ♂♂ June 28, 1876 (one in Col. W. F. H., No. 1520).

Kentucky Warbler (*Oporornis formosa*).—Rare. One specimen, a male, taken August 16, 1876, at Suffield, Conn., of which he says: "I shot the Kentucky Warbler in the lane by the large chestnut tree." This is the bird of which C. Hart Merriam says in a review of the birds of Connecticut, 1877. "A specimen was taken by Erwin I. Shores at Suffield, Conn., on August 16, 1876, a bird new not only to the state of Connecticut but new also to the whole avifauna of New England." It is now No. 1509, Coll. W. F. H. This record is not mentioned at all by Sage and Bishop in the Birds of Connecticut, for what reason I know not. There is just one more record for Connecticut in those early days, two for Massachusetts and two for Vermont (Auk, Vol. XXIV, 1907, p. 346).

Connecticut Warbler (*Oporornis agilis*).—Dr. Shores took just

five specimens, a ♀, on September 10, 1879, at Suffield (Coll. W. F. H., No. 1531), a ♀, September 28, 1880, at West Bridgwater, Mass., and three specimens on September 17, 1881, at the same place. (One in Coll. W. F. H., No. 1497.)

Mourning Warbler (*Oporornis philadelphia*).—Rare in Connecticut. Mr. Shores took only two specimens, a male, May 29, 1879 (Coll. W. F. H., No. 1484), and a male, May 22, 1877 (Coll. W. F. H., No. 1485). These two records are not given by Sage and Bishop and should be added to their list.

Yellow-breasted Chat (*Icteria virens*).—A rare breeder in that section. Two taken, a male each time, May 17, 1877, and June 23, 1877 (Coll. W. F. H., Nos. 1405 and 1406).

Wilsonia pusilla.—Rather rare. Nine specimens taken. A male taken each on May 26, 1874, May 10, 11, 13 and 23, 1876, May 14, 1877, May 22, 1877, a female on August 31, 1877, and a male on September 10, 1879. Two of these are in my collection. Sage and Bishop say, "usually rather rare and most often seen in spring."

Hooded Warbler (*Wilsonia citrina*).—Very rare. One specimen taken, a male, on July 8, 1875, at Suffield, Conn. (Coll. W. F. H., No. 1508). Ridgway says in his Birds of North and Middle America, Vol. II, p. 706, of this species: "Breeding northward to Connecticut (Suffield, etc.)." Evidently basing this upon the present specimen, perhaps the first specimen taken in Connecticut. The other specimen in Dr. Shores' collection (now Coll. W. F. H., No. 1502) was taken by the late Dr. E. A. Mearns, a male in high nuptial plumage on May 21, 1878, at Highland Falls, New York, and seems to be one of the earlier records for *that* state.

The Titlark or Pipit is not mentioned from Connecticut. Two specimens he took at Cranston, R. I., on November 20, 1874, and several at Hampton, Va., in 1892. The Catbird he found less common than the Brown Thrasher. Of the Wrens he mentions for Connecticut only the House Wren, and from the Southwick Ponds in Massachusetts the Short-billed Marsh Wren. The Brown Creeper, the White-breasted and the Red-breasted Nuthatches he found quite often. A remark under the Chickadee (*Penthestes atricapillus*) shows what a careful observer he was. He writes under date of March 27, 1882, at West Bridgwater, Mass.: "Several times this winter have heard a note that sounded like a Wood Pewee, but yet I knew none of them could be here at such a time. Today I've stood within ten feet of a Chickadee and have seen him dilate his throat and give utterance to a sound which I should express by 'chee-bir-de.' First syllable loud and long and the next of half length and less volume, the last short and not loud enough to be heard a great distance. The whole is rather brighter and quicker

than that of the Wood Pewee, but very closely resembles it. Nothing like their very bright and quick note of 'chicadee.' At a distance the last syllable seems only a continuation of the second." The two Kinglets he found commonly.

Blue-gray Gnatcatcher (*Polioptila caerulea*).—He took only one specimen, when he "took a ride down the bay just for fun," namely, a male at Silver Springs, R. I., on June 24, 1875 (Coll. W. F. H., No. 1555). There are seven records for Massachusetts of this bird, all of a later date, and seven for Connecticut. Two of these are earlier and one for the same year from Providence, R. I., all four mentioned by Purdie in Bull. Nutt. Orn. Club II, 1877, including Dr. Shores' specimen.. There are only four specimens all told from Rhode Island.

Of the *Turdidae* we find the Bluebird, the Veery, and the Hermit Thrush mentioned as common, the last one arriving as early as April 2, 1877, and leaving as late as November 1, 1882. The Olive-backed is less common and the Wood Thrush common only about every third year.

Robin (*Planesticus migratorius*).—Common. Sometimes stays all winter, as January 2, 1879. While living at Hampton, Va., January 12, 1892, we find this record in the diary: "A fine male presented by Sam L. Garrett, shot at Curratuck County, North Carolina. Curiously marked with white and black. Albinistic and melanistic mixed. Part of the breast, wings and tail alone natural color" (Coll. W. F. H., No. 1335).

And then the book becomes silent, only to be opened four years later, in 1896, stating, that, owing to his father's death and his moving from place to place, he sold his cabinet with 1,946 skins and his osteological specimens to Frank Blake Webster Company. He retained the number of 302 skins. Once more the book is opened, in 1900, and two specimens recorded as taken at Fort Caswell, N. C., where he lived after the Spanish-American war. The two specimens were a Black-bellied Plover and a Turnstone. Then he goes on to state that he might be called to the Philippines for medical service and works almost day and night to perfect his magnificent collection of seaweeds. And that ended his career as an Ornithologist and the diary. Mrs. Shores wrote me that the Doctor died at Schenectady, N. Y., on May 6, 1906, after they had lived there for about four and a half years.

I never knew this man personally, but you will agree with

me that I was able to write to Mrs. Shores: "He was not only a keen observer and a man of scientific accuracy, but also a man of great modesty — too much so perhaps — with an independent turn of mind and he had a nature that must have been noble and good." And in return came the reply: "The Doctor was all you say of him and certainly had a wonderful mind."

This man furnished many of the older New England ornithologists with his splendid records, on which in part at least they built up their fame, but he never published anything over his own signature that the wife or I know of. He was for a time an Associate Member of the A. O. U., which of course, as you all know, does not mean anything. And when he died, there were none of his old friends, so often mentioned in the diary, Jos. Ely, Fred Jenks, David Brewer and others, some of whom are no doubt living today, to speak of his work, and because he was not a member of the A. O. U. at the time of his death his work was not reviewed. A streak of luck has let this diary fall into my hands and you will agree with me that he did his work well. So I have no more interest in this appreciation but that full justice be done though even at so late a date, to one who knew the birds and loved them well, who furthered the cause of science in many ways; and if the men of New England have forgotten him and his ornithological work without a word of praise, we men of the Middle West at least will do him justice and whisper over his grave: "*Well* done was thy work!" And the old woods of Suffield will nod their consent to this appreciation of their old friend of long ago, of Dr. Erwin I. Shores!

A COÖPERATIVE BIRD CENSUS AT WASHINGTON, D. C.

BY HARRY C. OBERHOLSER.

The importance of counting the actual numbers of birds over given areas, particularly during the breeding season, has been already amply demonstrated. Censuses of the birds present during the height of the spring migration are also of considerable value, both as a basis for comparison of the relative numbers of the various species in the same year, and of the same species in different years. Series of such observations taken throughout the migration season would give a pretty good idea of the volume of the migration; and a series extending through a number of different years would show its fluctuations, which, as we already know, are often considerable. It is practically impossible for a single person to make satisfactory observations of this kind, except over a very limited area, and the best results are undoubtedly obtainable by the coöperative work of a number of persons.

The writer, with the assistance of fifteen other ornithologists, planned a census of this kind in the vicinity of Washington, D. C. As may be seen from the accompanying list, so many ornithological experts have rarely been engaged on a similar task at any one time. The day chosen was May 12, 1913, which date in May may be considered the height of the spring migration for the vicinity of Washington. Weather conditions proved propitious, the day being bright and clear with a rather chilly northeast wind. The country investigated consisted of the region within 20 miles of the city of Washington, and comprised the valleys of the Potomac and Anacostia rivers, together with their tributary streams and the adjacent uplands. The routes of the various parties, 13 in number, were laid out so as to cover the country in all directions from Washington. This section consists of the wide wooded valleys of the Potomac and the Anacostia rivers, along which

there are in places rather extensive areas of bottomland, mudflats, and marshes; the numerous small timbered streams tributary to both these rivers; and the rolling upland farms interspersed with more or less extensive areas of woodland. The timber in this region is almost entirely second growth, although in some places the trees reach a considerable size. Most of the woods are deciduous, but there are groves of pines in many places and a few scattered hemlocks along the river bluffs.

Our careful bird survey indicated that 1913 was not a very good year for birds, but the results are, nevertheless, from several standpoints, decidedly interesting. One fact of distribution stands out clearly, which is that the best places for birds about Washington lie almost all in the more or less immediate valley of the Potomac and Anacostia rivers, including, of course, the many small streams that intersect their banks.

On this day the total number of species observed was 129; of individuals actually counted, 12,257; though, since one of the parties made no count of individual birds, this latter number is really too small. That the number of species seen is by no means as great as could be reasonably expected, notwithstanding the fact that Washington is not a particularly good place for birds, is evident from an examination of the list, which shows that there are several species of water birds (particularly ducks, of which there is not one in the list), shore birds, hawks, owls, flycatchers, warblers, sparrows, and a few others, which might reasonably have occurred. This absence of certain species must be accounted for by the fact that certain unknown conditions were unfavorable for birds, rather than by the lack of careful search, since the work was thoroughly done by all the parties concerned.

The six most numerous species, in the order of their abundance, were as follows: English sparrow, barn swallow, tree swallow, song sparrow, chimney swift, and catbird — rather an unexpected list.

The sixteen species least numerous, and of which only a single individual was noted, are included in the following list:

great blue heron, sharp-shinned hawk, marsh hawk, king rail, woodcock, great-horned owl, nighthawk, red-breasted nuthatch, solitary vireo, yellow palm warbler, bay-breasted warbler, northern parula warbler, Nashville warbler, blue-winged warbler, blue grosbeak, and Bachman sparrow.

The nineteen species of most general distribution, as evidenced by the fact that they were observed by all the parties in the field, may be listed as follows: turkey vulture, bob-white, flicker, chimney swift, crested flycatcher, brown thrasher, catbird, southern robin, wood thrush, house wren, tufted titmouse, red-eyed vireo, yellow-breasted chat, scarlet tanager, cardinal, chewink, song sparrow, chipping sparrow, and English sparrow.

In addition, the following twelve others were noted by every party except one: kingbird, Carolina wren, Carolina chickadee, blue jay, southern crow, white-eyed vireo, American redstart, Maryland yellow-throat, oven-bird, purple grackle, field sparrow, and American goldfinch.

An analysis of the various lists shows that a number of species, in addition to those of usually special distribution, such as water birds and shore birds, were confined on this date largely or wholly to the valleys of the rivers and the larger streams. Such species were: barn swallow, bank swallow, rough-winged swallow, American redstart, hooded warbler, Maryland yellow-throat, northern water-thrush, prairie warbler, black-poll warbler, black-throated green warbler, black-throated blue warbler, cardinal, song sparrow, and white-throated sparrow.

Two species which have been increasing in numbers about Washington during the past few years were noted on this occasion — the mockingbird, which was common, and the migrant shrike, which was tolerably common.

Of the rarer birds of the District of Columbia there were found the king rail, red-bellied woodpecker, great horned owl, Cape May warbler, blue-winged warbler, Bachman sparrow, and Henslow sparrow.

Several migrant birds, for which May 12 is an unusually late date, were also observed, as noted below, the dates after each being the latest known previous records for this region:

Greater yellow-legs, May 16,
Least sandpiper, May 15,
Red-breasted nuthatch, May 12,
Solitary vireo, May 18.

For three other species the latest record of spring occurrence was extended, these species with their previously recorded dates being as follows:

Pied-billed grebe, April 24,
Yellow-legs, May 11,
Yellow palm warbler, May 1.

The itinerary of each of the thirteen parties engaged in this survey was as follows:

1.—Great Falls, Virginia: By electric car from Washington, D. C., to Great Falls and return. Traveled on foot, 14 miles in the region about Great Falls on the Virginia side of the Potomac river. Total distance traveled, 46 miles. Time in field, 4:00 a. m. to 8:40 p. m. Total number of species observed, 82; individuals, 623. A. Wetmore.

2.—Washington, D. C., to Great Falls, Maryland: By automobile to Great Falls and return. Total distance traveled, 32 miles. Time in field, 7:00 a. m. to 5:00 p. m. Total number of species observed, 68; individuals, 728. V. Bailey and Mrs. V. Bailey.

3.—Valley of the Potomac river in Virginia, from Elkins and Difficult Run to Chain Bridge; and the District of Columbia, from Fox Hall Road to Observatory Heights, D. C.: By electric car from Washington, D. C., to Elkins, Virginia. Traveled on foot, 22 miles, from Elkins, Virginia, to Observatory Heights, D. C. Total distance traveled, 55 miles. Time in field, 4:00 a. m. to 8:00 p. m. Total number of species observed, 73; individuals, 701. E. A. Preble and W. L. McAtee.

4.—Potomac Valley, on the Virginia side, from Georgetown,

D. C., to Chain Bridge, Virginia; and on the Maryland side, from Chain Bridge, D. C., to Cabin John Bridge, Maryland: By electric car from Washington, D. C., to Georgetown, D. C., and Cabin John Bridge to Washington. Traveled on foot, 18 miles, from Georgetown, D. C., to Cabin John Bridge, Maryland. Total distance traveled, 32 miles. Time in field, 4:15 a. m. to 5:55 p. m. Total number of species observed, 75; individuals, 914. H. H. T. Jackson.

5.—Arlington, Fort Myer, and Rosslyn, Virginia, to the Virginia end of the Long Bridge over the Potomac: By electric car from Washington, D. C., to Rosslyn and return. Traveled on foot, 15 miles, Rosslyn to Arlington, Fort Myer, and the Long Bridge. Total distance traveled, 20 miles. Time in field, 3:50 a. m. to 8:00 p. m. Total number of species observed, 66; individuals, 2,105. E. A. Mearns.

6.—Dyke, Fairfax County, Virginia: By electric car from Washington, D. C., to Dyke and return. Traveled on foot about 10 miles in the vicinity of Dyke. Total distance traveled, 34 miles. Time in field, 8:00 a. m. to 6:00 p. m. Total number of species observed, 66; individuals, 516. W. Palmer.

7.—Western side of Anacostia River Valley, from Anacostia, D. C., to Benning, D. C.: By electric car from Washington, D. C., to Anacostia, D. C. Traveled on foot, 5 miles, from Anacostia to Benning, D. C. Total distance traveled, 13 miles. Time in field, 4:03 a. m. to 8:50 a. m. Total number of species observed, 58; individuals, 1,382. W. D. Appel.

8.—Rock Creek Park; and the Anacostia River Valley from Benning, D. C., to Bladensburg, Maryland: By electric car from Rock Creek Park to Anacostia, D. C., and return. Traveled on foot in Rock Creek Park and in the Anacostia Valley, six miles; by rowboat, Benning to Bladensburg and return, 11 miles. Total distance traveled, 29 miles. Time in field, 4:00 a. m. to 9:00 p. m. Total number of species observed, 91; individuals, 3,049. Harry C. Oberholser.

9.—Woodridge, D. C., to Beltsville, Maryland; and Laurel, Maryland: By electric car from Beltsville to Laurel, Maryland, and Laurel to Woodridge, D. C. Traveled on foot, 15

miles, from Woodridge, D. C., to Beltsville, Maryland, and about Laurel, Maryland. Total distance traveled, 35 miles. Time in field, 4:10 a. m. to 7:00 p. m. Total number of species observed, 61; individuals, 790. E. R. Kalmbach.

10.—Woodridge, D. C., via Northwest Branch, to Burnt Mills and Forest Glen, Maryland: Traveled on foot, 13 miles, Woodridge, D. C., to Forest Glen, Maryland. By electric car, Forest Glen to Woodridge. Total distance traveled, 25 miles. Time in field, 4:05 a. m. to 7:00 p. m. Total number of species observed, 71; individuals, 748. A. H. Howell.

11.—Valley of Rock Creek, D. C.: Traveled on foot, 6 miles in Rock Creek Valley. Total distance traveled, 6 miles. Time in field, 5:15 a. m. to 10:30 a. m. Total number of species observed, 34; individuals, 260. E. J. Brown.

12.—Lanham, Maryland, to College Park, Maryland: Traveled on foot, 5 miles, Lanham to College Park, Maryland. Total distance traveled, 5 miles. Time in field, 6:00 a. m. to 11:45 a. m. Total number of species observed, 58; individuals not counted. W. R. Maxon and T. H. Kearney.

13.—Falls Church, Virginia: Traveled on foot 12 miles, in the vicinity of Falls Church. Total distance traveled, 12 miles. Time in field, 5:55 a. m. to 5:45 p. m. Total number of species observed, 51; individuals, 538. J. H. Riley.

The following tables gives in graphic form the number of each species observed by each party; also the total number of each species observed by all the parties during the day; as well as the other totals given above:

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Podilymbus podiceps podiceps					2									2
Nycticorax nycticorax naevius	1	80	12	21	2		8	4	1					129
Butorides virescens virescens	1					2								3
Ardea herodias herodias					1									1
Cathartes aura septentrionalis	16	45	81	26	13	13	10	23	21	33	10	+	6	297+
Cerchneis sparveria sparveria				1	1							1	1	4
Buteo lineatus lineatus				1		2			2					5
Buteo platypterus platypterus		1			1								1	3
Accipiter cooperii			1		1									2
Accipiter velox			1											1
Circus hudsonius												1		1
Colinus virginianus virginianus	5	11	8	2	6	3	12	5	7	5	1	+	4	69+
Rallus elegans						1								1
Totanus melanoleucus								5						5
Totanus flavipes								5						5
Tringa solitaria solitaria					2			1	1	1				5
Actitis macularia	6		2	12	7	4	12	26	3	1				73
Ereunetes pusillus								9						9
Pisobia minutilla								3						3
Philohela minor						1								1
Oxyechus vociferus vociferus		1					2	2						5
Zenaidura macroura carolinensis	10	8	6	3	7	2		2	17	8		+	12	75+
Coccyzus americanus americanus	1	3		1		2					1			8

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Coccyzus erythropthalmus	2													2
Colaptes auratus luteus	14	4	6	1	13	5	6	7	4	5	3	+	3	71+
Centurus carolinus	5													5
Melanerpes erythrocephalus		4	1					6	7	2	1			21
Dryobates pubescens medianus	1	1	2		8			1		1		+		14+
Dryobates villosus villosus	2		1					2	1		1			7
Streptoceryle alcyon alcyon				1	1		2	1	3	1				9
Bubo virginianus virginianus	1													1
Strix varia varia			1			1								2
Chordeiles virginianus virginianus	1													1
Archilochus colubris	1	1	1					1	2					6
Chaetura pelagica	14	49	69	24	42	46	11	82	21	20	100	+	25	503+
Horizopus virens	13	11	3	4	18	3	4	4	5	9		+		74+
Empidonax virescens		2		3	4	3	1	4		1	4			22
Empidonax minimus	2			1				1						4
Sayornis phoebe	1	10	5	6	4	4			3	5	4	+	2	44+
Myiarchus crinitus	14	6	8	3	11	8	5	21	2	9	2	+	6	95+
Tyrannus tyrannus	2	12	9	2	1	4	3	3	4	7		+	1	48+
Toxostoma rufum	1	8	6	1	7	8	18	5	4	11	10	+	3	82+
Mimus polyglottos polyglottos	1	2	6		2		1	4	1	5			1	23
Lucar carolinensis [1]	4	25	24	42	113	19	59	59	50	37	10	+	50	492+
Sialia sialis sialis	6	3	7				3	1	10	5		+		35+
Planesticus migratorius achrusterus	4	20	8	4	18	1	15	10	14	34	1	+	12	141+

[1] The latest name for *Dumetella carolinensis*.

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Hylocichla fuscescens fuscescens					1	4	2	1						8
Hylocichla aliciae aliciae		4			4			5					1	14
Hylocichla ustulata swainsoni	9		3	2	2	3		4		4				27
Hylocichla mustelina	30	7	12	10	69	3	18	48	18	24	3	+	10	252+
Polioptila caerulea caerulea	2			1			1	4	2					10
Troglodytes aedon aedon	3	10	9	18	27	6	13	6	36	22	6	+	2	158+
Thryothorus ludovicianus ludovicianus	13	13	11	5	16	2	8	2	13	6	2	+		91
Telmatodytes palustris palustris					47	28	30	34						139
Sitta canadensis	1													1
Sitta carolinensis	2			1					1	1		+		5+
Penthestes carolinensis carolinensis	5	8	4	1	2	4	1	5	6	1	3	+		40+
Baeolophus bicolor	5	6	9	1	4	6	7	13	14	7	4	+	10	86+
Cyanocitta cristata cristata	18	6	10	4	3	4	8	14	6	15		+	25	113+
Corvus ossifragus	2	2	6	1	23	3	7	36	21	9	12			122
Corvus brachyrhynchos paulus	10	17	19	16	94	19	19	46	45	33		+	25	343+
Lanius ludovicianus migrans		3	1					2		1				7
Vireo griseus griseus	2	2	9	2	8	18	16	5	13	3		+	3	81+
Lanivireo solitarius solitarius													1	1
Lanivireo flavifrons	9	5	3	4	8	4	4	6	6	5		+		54+
Vireosylva gilva gilva	1			3					1	2				7
Vireosylva olivacea	54	24	45	32	64	18	21	47	32	25	10	+	8	380+
Bombycilla cedrorum	1						1							2
Iridoprocne bicolor					60		550	421				+		1031+

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Hirundo erythrogastris	2	8	2	2	3		6	1073	19	7			1	1123
Riparia riparia riparia			2			2		3						7
Stelgidopteryx serripennis	9	9	5	32	22	2	90	471						540
Petrochelidon lunifrons lunifrons						1	1			3				5
Progne subis subis	4	2						2						8
Setophaga ruticilla	23	22	7	45	54	14	18	26	12	8		+	2	231+
Wilsonia canadensis				1		1		3	3					8
Wilsonia pusilla pusilla				1									1	2
Wilsonia citrina	4	1	6	2				2		1	1			17
Icteria virens virens	17	15	8	2	13	11	8	4	20	12	5	+	12	127+
Geothlypis trichas trichas	3	23	6	11	77	14	18	15	42	17		+	6	232+
Oporornis formosus	11	2	5	2		4		6		3				33
Seiurus noveboracensis noveboracensis				3				1						4
Seiurus motacilla	10	1	1	1	4			1	1	1				20
Seiurus aurocapillus	19	12	11	6	11	8	7	28		25	10	+	50	187+
Dendroica palmarum hypochrysea				1										1
Dendroica discolor	12	13	11	1	3	5				1		+	1	47+
Dendroica vigorsii vigorsii	1				2	1						+		4+
Dendroica striata	1	7	7	1		1	17	34	4			+	1	73+
Dendroica castanea			1											1
Dendroica pensylvanica	2		1					5				+		8+
Dendroica dominica dominica					1	1		1	1					4
Dendroica fusca	3							3			1			7

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Dendroica virens	1			1				10		1		+	2	15+
Dendroica coronata coronata	33		2	1			11	5		1		+	100	153+
Dendroica caerulescens caerulescens	1		3	11		1		8	2	1		+	3	30+
Dendroica tigrina	3		2	2		1		8					30	46
Dendroica magnolia			1	3				2						6
Dendroica aestiva aestiva	2	2	12	2	36	3	15	15	22	4	6			119
Compsothlypis americana americana	23	4	7	8		10	1	5			4	+	3	65+
Compsothlypis americana usneae								1						1
Vermivora ruficapilla ruficapilla						1								1
Vermivora pinus				1										1
Helmitheros vermivorus	2	3	3	2	1			1		1	2			15
Mniotilta varia	2	1	9	4				13	4	1		+	6	40+
Dolichonyx oryzivorus										17				17
Sturnella magna magna	2	6	15	2	5	5	4	3	7	13		+		62+
Agelaius phoeniceus predatorius	1					16	10	19	1	4				51
Icterus galbula	2	3		2				1	1	4		+		13+
Icterus spurius	2		4	1	6	4	2	2		4			1	26
Quiscalus quiscula quiscula	4	33	2	22	30	34	37	18	31	41		+	12	264+
Molothrus ater ater				3				1	3	7				14
Piranga erythromelas	24	10	10	6	4	3	6	7	3	9	4	+	6	92+
Piranga rubra rubra		1			2			1		1		+		5+
Cardinalis cardinalis cardinalis	18	11	25	10	17	6	22	24	17	15	4	+	12	181+
Hedymeles ludovicianus[1]	2		1	1				6		1				11

[1] The proper name for *Zamelodia ludoviciana*.

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Guiraca caerulea caerulea		1												1
Linaria cyanea[1]	17	9	9	1			1	6		9	3	+	6	61+
Pipilo erythrophthalmus erythrophthalmus	6	5	14	4	19	7	12	22	21	20	12	+	25	167+
Melospiza georgiana					21									21
Melospiza melodia melodia	8	26	27	30	179	20	65	65	40	32	6	+	6	504+
Zonotrichia albicollis	5	2	6	12	12		4	5	3			+	4	53+
Spizella pusilla pusilla	6	8	12	2	12	10	19	4	19	9		+	4	105+
Spizella passerina passerina	19	29	26	5	5	5	4	4	12	16	4	+	12	141+
Peucaea aestivalis bachmanii												1		1
Passerherbulus henslowii henslowii						4							1	5
Ammodramus savannarum australis		1	2			3				2		+	1	9+
Pooecetes gramineus gramineus		1								1		+		2+
Passer domesticus hostilis	11	28	13	400	812	54	104	105	87	81	10	+	6	1721+
Astragalinus tristis tristis	12	15	14	7	37	10	22	14	18	7		+	12	168+
Total number of species	82	68	73	75	66	66	58	91	61	71	34	58	51	129
Total number of individuals	623	728	701	914	2105	516	1382	3049	790	748	260	3+	538	12257+

[1] The latest name for *Passerina cyanea*.

REMARKS ON THE MID-MAY CENSUS.

W. DEWITT MILLER AND CHARLES H. ROGERS.

To us it seems that the value of this census, as of others, such as "Bird-Lore's" Christmas one, lies more in the accuracy of the count of individual birds, as a basis for comparison, than in the total number of species noted. We strive for as many species as possible consistent with as accurate as practicable an enumeration of individuals. Holding such an opinion, we venture to claim that our method, presently to be detailed, is preferable to the methods of certain other of The Wilson Bulletin's mid-May census takers.

The frequent use of "common" in the Ohio lists means very little and is practically worthless for comparison, especially when it is used to the exclusion of all other terms, such as "abundant," thus putting the Warbling Vireo and the Robin, for instance, into the same class. Again, figures such as those in Mr. Kohler's list last year, apparently estimates made after returning from the field, we believe to be far from accurate. For example,—on our 1916 "Big Day," Song Sparrows seemed so ubiquitous that, had we not counted as we did, we might easily have estimated them later at 250 (Mr. Kohler's number for his census), but our figures show only 66. We are, therefore, not convinced that Mr. Kohler and Mr. Taubenhaus, in somewhat less than ten hours, noted nearly four times as many Song Sparrows as did we in fifteen or sixteen hours of daylight, even supposing that species to be more abundant in their region than in ours.

Our big day is only a glorification of the kind of day each of us spends on an average of over once a week all the year around. On nearly every such occasion the individuals are entered in the field notebook as often as seems necessary to avoid forgetting any; the species naturally appear on the pages in the order of observation. This, however, is much too slow for the Big Day,—the notebook would have to be opened and perhaps several pages turned in looking for any species.

On this occasion each man has a piece of heavy cardboard about four by ten inches in size, and on each side of this is closely fastened one sheet of finely-ruled paper very slightly smaller. A list containing all species we are at all likely to meet (about one hundred), with a few blank spaces where they are most likely to be needed, is written in ink in A. O. U. "Check-List" order on this paper the previous day. In the field a pencil is used, and this may be tied to the cardboard. Individuals are entered at intervals as brief as seems necessary; often the board is hardly in the pocket before it must come out again. Of course all this does delay the progress of the hunt to a certain extent, and occasionally a "good" bird may slip by unobserved while we write, but we believe that the comparative accuracy of our results justifies the loss of time and, possibly, species, and we know of no scheme that would take less time, unless we should take along a scribe to whom we could dictate!

We are usually together, but at times become separated (though never beyond hail), so that our totals sometimes differ. In that case the larger figure is used for publication. Thus, if one sees ten Phœbes, the other twelve, each including two not seen by the other, the number printed is twelve, not fourteen. The latter, however, would be better, if always practicable.

From many years' familiarity with our region, we have carefully chosen a route to include the haunts of as many species as possible. We find that we cannot cover more than fourteen miles before dark; this leaves six miles of return journey with the possibility of adding the Whip-poor-will and other species that make themselves heard by night. From the start till the end of the twenty miles we are afoot.

We are particularly interested in the avifauna of northern New Jersey, and we take the liberty of questioning certain of Mr. Kohler's identifications. In his last May census, "Purple Grackle, 150; Bronzed Grackle, 25;" indicates what we fear to be a misplaced confidence in his ability to distinguish between these two forms in the field. To do this requires such

exceptionally favorable circumstances that it is very rarely possible for even the best-trained field ornithologist to identify positively, by the use of glasses, a Bronzed Grackle in the range of the Purple. Also we have grave doubts as to the "Wilson's Warblers" Mr. Kohler records as breeding in New Jersey ("The Oölogist," vol. xxxiii., No. 6, p. 104), as Wilson's Warbler has not been found in New York in summer and is rare in the nesting season even in northern New England.

THE CORRELATION BETWEEN THE MIGRATORY FLIGHTS OF BIRDS AND CERTAIN ACCOMPANYING METEORLOGICAL CONDITIONS.[1]

FRANK SMITH.

The purpose of this paper is to call attention to the correlation between the principal migration activities of birds in Spring in Central Illinois and certain types of weather conditions. The existence of such correlation is shown by an examination of the migration records which have been made during the past fourteen years (1903–1916) at the University of Illinois.

The region in the vicinity of Urbana, where the greater part of these records have been made, is an elevated prairie, without marshes or swamps; the streams are mere ditches; and the natural timber is but a thin woodland tract skirting one of these ditches and a nearby artificial pond. The most complete data are from a cemetery adjacent to the campus; an artificial forest of about 18 acres and over 40 years old which is on the campus; and a few rapidly disappearing hedges and brushy patches in the outskirts of the city. More extensive streams and woodlands twelve to twenty miles distant, have been visited very frequently but not daily and hence the data from them have not been used in this discussion.

[1] Contribution from the Zoölogical Laboratory, University of Illinois, No. 87.

Daily records have been made each year from early in February until late in May for the past fourteen years and each record includes a list of all the species seen, with approximate numbers of each, together with memoranda concerning nests and songs. During the season of migration activity these records include results of early morning trips by the writer and others; trips of sections of a class in Ornithology at 8-10 a. m. or 3-5 p. m. taken with an instructor; and individual work of a few experienced students taking more advanced work who are assigned special territory for regular observations. In addition to these records there are nearly always some members of the University Staff and other citizens, often former students, who contribute results of frequent trips and help materially in the adequacy of the data. The great superiority of such composite data over that possible by a single observer has already been discussed by Cooke (Auk. 1907: 346) and Stone (Proc. Acad. Sci. Phila. 1908: 128).

The combined results of a number of observers makes a list of dates of "first seen" conform much more closely with a list of dates of first arrivals than is possible with a single observer. A comparison of the records of the writer with those of the other observers during the years of 1912–1916 shows the following relations between his list of dates of "first seen" and those of the other observers. 43.5% of the "firsts" were recorded on earlier dates by others; 26.5% were recorded earlier by the writer; and 30% were recorded on the same dates by both. This is a decidedly better showing than that of Mr. Cooke and his collaborators at Washington who only recorded about 8.5% of the "firsts" on the same days.

In the problem under discussion we must determine what measurable phenomenon we shall use as an evidence of migration having taken place. We may use the appearance of species which have not previously been recorded for the season; or we may use obvious increases of numbers of individuals or bulk movements; or we may use the non-appearance of birds which have been recorded on the next preceding lists. For the purposes of this paper I shall deal with records containing

the larger numbers of "firsts" and in doing so it becomes very obvious that in the data studied we are at the same time dealing with records showing important bulk movements.

The data of "firsts" shows a great lack of uniformity of distribution throughout the season. The average season has had 89 days and the number of "firsts" has averaged 120 but these have been so bunched that 61 of them have been recorded on 9 days. The extremes are found in the season of 1907 when it took 14 days to record one half of the "firsts," and in 1912 when one half of them were bunched on 5 days. This lack of uniformity in distribution is still more apparent when we examine the records of the last 30 days of each season, during which three fifths of all of the arrivals make their appearance. On the average, 74 "firsts" are recorded in these 30 days and 39 of them are bunched on 4 or 5 days. Extremes occurred in the years 1915 in which it took 8 days to record one half of the "firsts" of the last 30 days, and in the years 1909 and 1916 in each of which it took but 2 days. One half of all the "firsts" of those 14 seasons of 30 days each were recorded on a total of 63 days and we have now to examine the weather conditions which existed on those days.

For such comparison weather maps are of course desirable and preferably a series of the Washington maps which appear daily including Sundays and holidays.

An examination of the weather maps for the 63 days on which are recorded a half of all the "firsts" of the last 30 days of each of the 14 seasons shows that on 54 of those days there were approaching areas of low pressure, with south winds which had been effective during the preceding night. On 5 days there were southerly winds, or had been at points further south in the state during the preceding night, although an approaching "low" was not well defined. On 3 days the winds were light and either due East or West. On one night, April 30, 1907, there was a rather light northerly wind and yet 5 "firsts" were recorded on the morning of May 1st where none of them had been found on the preceding day.

A study of the records of these 63 days readily shows that they include the heaviest of the bulk movements of many species as well as the "firsts" of others.

In view of what has preceded there seems to me ample justification for the statement that in Central Illinois there is a high degree of correlation between the flights of night migrants and the meteorological conditions involved in the near approach from the West of an area of low barometric pressure with the accompanying rise in temperature and southerly winds.

A preparation of graphs showing temperature changes and migration activities would doubtless show marked correlation, as have those prepared by Stone at Philadelphia. So also would graphs showing changes in the wind and migration activities. The determination of the relative importance of temperature and wind direction in the initiation of the separate migratory flights is yet to be made.

NOTES AND NEWS

In view of the greatly increased cost of printing the Wilson Bulletin, and in view of the impossibility of securing an early expression from all of our membership relative to an increase in membership dues and subscription price before 1918, it has been decided to make certain changes in the body of the Wilson Bulletin, beginning with this number, and to publish a magazine of only 48 pages per issue, and not to exceed four illustrations per number, unless the author of an article is willing to meet the cost of illustrations in excess of four. It is believed that the present high prices are temporary, and that with the return of normal conditions it will again be possible to resume the printing of a magazine of 64 or more pages without any increase of dues or subscription price. It is not deemed wise to reduce expenses by the use of cheaper paper or smaller type.

ANNUAL MEETING.

The FOURTH ANNUAL MEETING of the WILSON ORNITHOLOGICAL CLUB was held in the parlors of the New Morrison Hotel, Chicago, on December 27 and 28, 1916. In the absence of the President and Vice-President, the meeting was called to order by the Secretary, Professor T. L. Hankinson, of Charleston, Ill. The Rev. W. F Henninger was chosen to act as presiding officer for the sessions. There were 44 members in attendance.

The following papers were read during the session:

Some Rare Birds Observed at LaGrange, Illinois, by Edmund Hulsberg, LaGrange, Illinois.

Relation of Migratory Flights of Birds to Weather Conditions, by Professor Frank Smith, Urbana, Illinois.

Ecology trip on the Coast of Washington, by Charlotte Weatherill, Elgin, Illinois.

Recent Adventures in Bird Photography, by Alvin R. Cahn, Madison, Wisconsin.

Some Methods in Bird Photography, by Ralph Wager, DeKalb, Illinois.

Exhibition of some Pecular and Beautiful Birds from different Parts of the World, by H. K. Coale, Highland Park, Illinois.

The Birds of Harney Valley, by Gerard Alan Abbott, Grosse Pointe Shores, Michigan.

Field Observations and Notes from the Chicago Area for 1916, by C. W. G. Eifrig, River Forest, Illinois.

An Interesting Spot in Northeastern Illinois, by Collin C. Sanborn, Chicago, Illinois.

The Work of the Illinois Audubon Society, by O. M. Schantz, Cicero, Illinois.

The Diary of a New England Ornithologist, by Rev. W. F. Henninger, New Bremen, Ohio.

The following papers were read by title since the authors were not present and time did not permit their being read in full:

Certain Problems of the Genus Dendroica, John Treadwell Nichols, New York, N. Y.

An Ornithological Survey of Scott's Bluff, Nebraska, Myron H. Swenk, Lincoln, Nebraska.

Some Anecdotes of Bird Life, O. J. Wescott, Chicago, Illinois.

The Iowa Lake Laboratory with special reference to Bird work carried on there, Professor T. C. Stephens, Sioux City, Iowa.

A Red-eye Vireo Study, Professor T. C. Stephens.

A Cat-proof Bird Shelter, Thomas H. Whitney, Atlantic, Iowa.

Disappearance of Bird Life in Northeastern Iowa, Ellison Orr, Waukon, Iowa.

A Bird Review of Rockford, Illinois, and Vicinity for the year 1916, Paul B. Riis, Rockford, Illinois.

The Workings of Federal Conservation as illustrated by the Washington Bird Reservations, Lynds Jones, Oberlin, Ohio.

Two illustrated lectures were given for the Wednesday evening programme, which were as follows:

Observations on the Breeding Habits of the Night Heron, by Ralph E. Wager, Northern Illinois State Normal School, DeKalb, Illinois.

The Albatrosses of Laysan and the Mating and Nesting Habits of Fregata Aquila, by Homer R. Dill, director of Vertebrate Museum, University of Iowa, Iowa City, Iowa.

Certain actions taken during the sessions, together with the report of the Treasurer, will be placed before the entire membership presently.

The following persons were elected to membership:

ACTIVE MEMBERSHIP.

Walter W. Bennet, Grinnel, Iowa (now associate);

Miss Bertha Burnett, 1201 East Third St., Mishawaka, Ind.;

Samuel F. Folt, Waukee, Iowa;

J. S. Huxley, Rice Institute, Houston, Texas;

John Treadwell Nichols, Am. Museum Nat. Hist., New York;
Charles J. Spiker, Blairsburg, Iowa;
Eugene Swope, Box 9, College Hill, Cincinnati, Ohio;
Mrs. H. J. Taylor, 1711 Douglas St., Sioux City, Iowa;
Fred Truesdale, Shandon, California;
Ralph Wager, State Normal School, DeKalb, Illinois;
Chas. Wescott, 152 North Scoville Ave., Oak Park, Illinois;
Alex. Wetmore, Bureau of Biological Survey, Washington, D. C.;
H. L. Stoddard, 7141 University Ave., Chicago, Illinois.

ASSOCIATE MEMBERSHIP

Dr. W. H. Bergtold, 1159 Race St., Denver, Colorado;
F. E. Burgess, Cushing, Iowa;
George S. Easton, 1814 Morningside Ave., Sioux City, Iowa;
Mr. A. F. Ewers, 3411 Pestalozzi St., St. Louis, Mo.;
Carroll Lane Fenton, 409 St. Charles St., Charles City, Iowa;
Charles W. Finley, 216 N. Ward St., Macomb, Illinois;
Edward H. Forbush, Mass. State Ornithologist, Room 136 State House, Boston, Mass.;
E. W. Hadeler, Painesville, Ohio, Assoc.;
W. R. Griffith, 4914 Fourth Ave., Sioux City, Iowa;
W. J. Knobbs, Troy, Iowa;
Miss Pearl Koehn, 900 S. Seventh St., Burlington, Iowa;
G. O. Ludcke, 2803 Pierce St., Sioux City, Iowa;
P. J. McCullough, Union House, Delaware, Ohio;
Geo. F. McNair, 125 North Eleventh St., Cedar Rapids, Iowa;
W. A. Matheny, Athens, Ohio;
Katherine Mauthe, 1436 Second Ave., South, Fort Dodge, Iowa;
George R. Mayfield, Vanderbilt University, Nashville, Tenn.;
Professor E. Palmer, Cedar Falls, Iowa;
F. H. Redmond, 3229 Berkeley Ave., Berwyn, Illinois;
Kenneth L. Rowe, Iowa Falls, Iowa;
Mrs. R. O. Ryder, 1041 Franklin Ave., Columbus, Ohio;
Mr. Robert P. Scholte, Pella, Iowa;
H. A. Scullen, Station "A", Ames, Iowa;
Mr. Dayton Stoner, 603 Summit St., Iowa City, Iowa;
Professor A. C. Webb, 308 Wilburn St., Nashville, Tenn.;
O. J. Wescott, Maywood, Illinois;
Noel J. Williams, Arnold's Park, Iowa;
C. B. Corey, Field Museum, Chicago, Illinois;
George Bennet, Iowa City, Iowa.

T. L. HANKINSON, Secretary.

MINUTES OF THE FOURTH ANNUAL MEETING OF THE WILSON ORNITHOLOGICAL CLUB.

An informal report was given stating that an official membership list is being constructed for the Secretary's office. This was published in as good condition as possible in the June number of the Wilson Bulletin, with requests for corrections to be sent to the Secretary. Many of these were received, and they have been used to produce a much better and more accurate list, which will be printed in one of the 1917 numbers of the Bulletin.

The programme of the present meeting was arranged by the Secretary with some help from the President, Mr. T. C. Stephens.

The minutes of the 1915 meeting at Columbus, Ohio, were written up and sent in for publication in the Wilson Bulletin. They appeared in the March, 1916, number.

Report of the Treasurer.

The report of the treasurer was read by Mr. P. B. Coffin, and by a motion, it was turned over to the auditing committee, appointed by the Chairman, Rev. W. F. Henninger.

This committee is composed of two members, Mr. O. M. Shantz and Mr. E. R. Ford.

It will report to the Secretary a short time after the Annual Meeting, as soon as the accounts and reports can be examined and audited.

Name of Our Organization.

The motion to change the name from Wilson Ornithological Club to Wilson Ornithological Society was voted down, and the old name is to be retained.

Printed Programmes.

The Club expressed a desire, by motion, that printed programmes be prepared for future meetings and that these be placed in the hands of members as long as possible before the meeting.

Summer Field Meeting.

A motion was made that the Club thankfully accept Mr. Stephens' invitation to have a summer field meeting at the Iowa Lakeside Laboratory in the summer of 1917. It was carried.

Ornithological Research.

At the suggestion of Mr. J. S. Huxley of Houston, Texas, in a letter to the Secretary, a committee was appointed to collect important notes on birds, obtained by Club members and others in their field work, and organize and arrange these for publication.

The following committee was appointed for this purpose:

Professor T. H. Huxley, Rice Institute, Houston, Texas.

Professor H. S. Dill, Vertebrate Museum, Iowa City, Iowa.

Professor Frank Smith, University of Illinois, Urbana, Ill.

CHANGE IN OFFICERS.

Mr. P. B. Coffin proposed that the Constitution be so changed,

That the Business Management of the Club be in the hands of two or three men, who shall constitute the Executive Committee, one of whom might be some business man or newspaper man or advertising man who need not be a member of the Club,

That the people constituting this executive committee should be appointed by the General Council,

That the General Council consist of the President, the Recording Secretary, and a series of Vice-Presidents or, if preferred, Associated Fellows, one of whom should be named from each state where the Club has twenty-five or more members, and one should be named from each organization affiliated with the Club. This General Council should meet once a year to determine the policy of the Club, but it would not have anything to do with its business detail. Each Vice-President or Associated Fellow would be held responsible for his own state and have the following duties:

A. to solicit new members,

B. to obtain reports and articles for the Wilson Bulletin,

C. to give information,

That all of the correspondence of the Club be centered in one place, and all of its records should be kept at one point, by having one man be Corresponding Secretary and Treasurer. One man should be Editor of the Bulletin, and a third should be Business Manager. These three men should be located where they can meet together at least once a month, and their communication to the Club members should be through the Bulletin.

CONSERVATION.

The Club voted that it go on record as urging the County Commissioners to establish Bird and Wild Life Havens in the prospective Outer Park Forest belt of Cook County, Illinois.

Mr. O. M. Schantz was appointed to represent the Wilson Club in conferences, to be held with a view to securing this Forest Preserve.

ELECTION OF OFFICERS.

The following officers were elected for the coming year:

President, Rev. W. F. Henninger, New Bremen, Ohio.

Vice-President and Business Manager, George L. Fordyce, Youngstown, Ohio.

Secretary, Gerard Alan Abbott, Grosse Pointe Shores, Michigan.
Treasurer, F. M. Phelps, Elyria, Ohio.
Editor of the Wilson Bulletin, Professor Lynds Jones, Oberlin, Ohio.
Extra members of the Executive Council, Professor T. C. Stephens, Sioux City, Iowa; T. L. Hankinson, Charleston, Illinois; Percival B. Coffin, Chicago, Illinois.

Attendance.

Forty-four persons registered their attendance at the meeting. These are distributed as follows:

19 from Chicago,
20 from Illinois outside Chicago,
1 from Ohio,
1 from Tennessee,
1 from Iowa,
1 from Wisconsin,
1 from Michigan.

FIELD NOTES

OBSERVATIONS ON SOME OF THE JUNE BIRDS IN THE VICINITY OF CINCINNATI, OHIO.

During the first two weeks of June, 1916, spent at Cincinnati, I made eleven trips into the surrounding districts, identifying over sixty species of land birds. Six of the trips were made to Ault Park, a bird paradise, where over fifty species other than the Mockingbird were found.

Excellent chances were afforded to study the Summer Tanager and the Mockingbird, unfamiliar birds to the writer. About a dozen of each species were found and many were observed at close range. The two birds, especially the Mockingbird, are rather scarce around Cincinnati, except in certain neighborhoods pointed out by a local bird authority. The status of the Mockingbird in the vicinity is interesting. The Queen City bird-lovers say that this wonderful songster is extending its range northward, which movement is largely controlled by the food supply and not by climatic conditions. This was verified by inquiries in the field. One farmer, a resident along Muddy Creek, told me that about five years previously the first Mockingbirds appeared in his neighborhood, and since then they have gradually increased in numbers. While talking to him a gray bird with a long tail flew from a cherry tree, displaying the tell-tale white wing-bars and tail feathers four broad streaks of white, making a conspicuous field mark in flight. At a long distance the birds resembling the Mockingbird are the Blue Jay and the Mourning Dove, which may be differentiated by studying the three species together. At ordinary range the Mockingbird is unmistakable.

The Summer Tanagers were very tame along Hillside Avenue below Sedamsville, where most of the Mockingbirds and Tanagers were found. One female Summer Tanager, perching on a weed stalk in the full sunlight, was approached within six feet, where the light orange-yellow hue of the bird seemed almost perfect. The somber greenish-yellow shade of the Scarlet Tanager cannot compare with this color. Only three Scarlet Tanagers were seen: a single male was a pleasant incident of an all-day trip along Muddy Creek and a pair were noted near Ault Park. One never tires admiring the beautiful tanagers: the matchless and gorgeous rose-red of the Summer Tanager and the flaming scarlet of the Scarlet Tanager that seems ready to burn up his coal-black wings and tail, the most vivid contrast in the bird-world. I always think of these two shades of red as the piranga reds.

Numbers of Cliff Swallows, an uncommon species to the writer, were flying with Bank Swallows, Purple Martins, etc., near the rocky cliffs facing Muddy Creek. This was my best opportunity to watch this swallow, which is rather rare in Allegheny County, Pennsylvania. The Grasshopper Sparrow was evident as a breeder in a field one-half mile north of Madisonville. In Ault Park I was surprised by running across a Louisiana Water-Thrush feeding its young. The Whip-poor-will, a rare bird around Cincinanti, is apparently breeding near Cove Creek.

In the cemetery near Fort Thomas, Kentucky, Orchard Orioles seemed to be everywhere, and for the first time I learned their sweet song, which I consider after the Bobolink's, the most liquid of our bird songs, and like that song a bubbling out of joyful notes. Around Cincinnati the Orchard Orioles outnumber the Baltimore Orioles about six to one, while in Western Pennsylvania ten Baltimore Orioles are usually seen to every Orchard Oriole. In the vicinity of Fort Thomas Yellow-breasted Chats were very numerous, although they were not uncommon anywhere.

One of the region's characteristic birds, the Bewick Wren, was not seen, although a lookout was kept for him, as I have never identified this bird. The Yellow-throat was observed but once, while the Redstart was not placed.

As I wandered through the woods many of the common familiar birds of Western Pennsylvania were absent. One of our rich songsters, the Rose-breasted Grosbeak, heads the list. With a northener it will take a lot of Mockingbirds to make up for the loss of the "potato-bug" bird. The tinkling Bobolink's melody was lamentably missing because no June day bird trip is complete without hearing "Robert-of-Lincoln's" tambourine-like flight song.

THOS. L. MCCONNELL.

FIELD NOTES FROM THE CHICAGO AREA FOR 1916.

The year opened auspiciously. A week of unusually mild weather in February brought, on the 22d of that month, the first Bluebirds, a Killdeer and a few Song Sparrows, although the last species seems some years to winter in small numbers as near as LaGrange, just 5-6 miles southwest of River Forest. On the same day 10-15 Ring-necked Pheasants were seen.

The most interesting parts of the Chicago area are no doubt the sand dunes, on the south shore of Lake Michigan. Here, 30-40 miles from Chicago, may yet be seen several pairs of Great Horned Owls and Ruffed Grouse. During the winter of 1915-16, as again in the present, large flocks of Redpolls and Evening Grosbeaks are

seen; also occasional Snow Buntings and Crossbills. Three flocks or the rare Northern Grosbeaks were seen, of 75, 45 and 8 individuals respectively. One was seen as late as May 4th in Jackson Park. They were again seen at the dunes on November 21 last. They feed on berries of *Rhus aromatica* and *Toxicodendron vernix* or Poison Sumac. When flying a greater distance, they form compact flocks and fly swiftly, straight and noiselessly. In the marshes and swales between the dunes the Marsh Hawk is common; they arrive about the beginning of March, mate about April 1st, and nests with five and four eggs were found on May 20th and 30th respectively. In the same places the Prairie Long-billed Marsh Wren, the Short-billed Marsh Wren and Henslows Sparrow, find congenial habitats. They are common by April 22d.

A visit on April 8th to the Longspur paradise, Addison, proved interesting. The temperature was 30-35°, the wind blew a gale, so that it was extremely unpleasant in those wind-swept, bleak hills; in fact, making headway and looking about was difficult. And yet, the Longspurs were evidently in their glory, they played and chased each other, twittered and tinkled in great style, as though they regarded that kind of weather as the ideal one for them. Conditions in the arctic tundra, where they breed, are no doubt much like they were here on that day. Many were already in nearly perfect nuptial plumage.

A later than usual stay on the part of winter visitants was observed, when Juncos were seen up to May 4th, after Bobolinks, Orioles, Catbirds, Blackburnian and other warblers had arrived. A real rarity was the finding of a Mockingbird on May 18th near my home. Mr. B. T. Gault, with whom I was taking a walk, and I had a good view of it at close range.

The nesting season brought along a peculiarity, inasmuch as in "Waller's Park" and nearby, the Robins especially, also the Mousing Doves placed their nests lower than other years, as low as 2-3 feet in the case of the former, and nearly all on the ground, in the case of the latter. I ascribe it to an attempt to escape the depredations of the Crows and Blue Jays, which probably do not pilfer quite so low, as a rule.

Unusually late records are the seeing of Chimney Swifts and Nighthawks on September 21st, a Hummingbird on October 6th, and a Black-crowned Night Heron on November 19th. A Saw-whet Owl was caught alive by an Italian in "Wallers Park," in a spruce tree, who promptly wrung off its head, for the reason that its calling disturbed him in his sleep, he said! A pair of Long-eared Owls stayed in one and the same Norway spruce there for at least four weeks, probably much longer, as there were quite a number of

pellets, etc., in and below the tree when first seen. One could go there at any time during the day and find them in that tree, even on the same branches, ready for an interview.

Finally, I would like to report one of the periodical incursions of the Goshawk. They were shot here in numbers during November and December. I received one from Orland, twenty miles south of Chicago, and one from Michigan, and Mr. K. W. Kahmann, the taxidermist, received more than fifty specimens alone. They were from the whole northern part of the state and as far south as Springfield.

C. W. G. Eifrig.

River Forest, Illinois.

A CAT-PROOF SHELTER.

Those who try to encourage birds to feed and nest around their homes are at once confronted by two serious obstacles, both introduced by man himself, and both greatly interfering with good results; I allude to house-sparrows and cats. While gun, trap, and poison will more or less reduce the numbers of sparrows and tend to drive them from premises where such measures are in use, it is impossible of course to prevent their occupying places where other birds go, and from annoying and fighting with privileged guests. Cats, however, can be absolutely barred from any given area by proper safeguards.

The more I study the habits of cats in relation to bird protection, the more strongly I feel that cat-proof fences should be in much more general use, and I am in hopes my description of the small shelter maintained last summer will induce others of the Wilson Club to try the same experiment. I had the problem of protecting at least a part of our yard from depredations by a neighbor's cat, a cunning and destructive hunter, but immune, by neighborhood reasons, from the extreme penalty it richly deserves. A strong spring-gun, (usually called an air-rifle) is very effective in daylight visits, one hit preventing further calls for some time, but there remained the probability of unopposed prowls at night. Part of our yard was already enclosed by an ordinary four foot wire fence on tubular steel posts. I found cats even when running from a rifle seemed unable, or very reluctant, to climb this fence, invariably escaping through overhanging trees. Following out this idea, I erected a higher wire fence around a group of shrubbery, and experience has proved it a thoroughly cat-proof shelter.

My shelter is circular, about thirty feet in diameter, enclosed by a small-mesh woven wire fence, hung loosely and with some over-

hang, on nine foot tubular steel posts. The fence is at present about five feet high, but the posts are high enough for two or three feet additional if necessary. A strong cat might bound over this fence from outside, but owing to the thick bushes, would have great difficulty getting out, and cats are very cautious of getting into any place which instinct warns them would be difficult of egress. I am positive no cat has ever been inside the enclosure, but a cat-trap is kept set and well-baited during the nesting season as a final precaution. Originally the location of the shelter was a rather unsightly rubbish pile, overgrown by elderberries. After deciding to make it useful, it was renovated, and other shrubs and vines planted. It now contains, besides elderberries, honeysuckles, hazel, wild gooseberries, a small wild cherry tree, hardy climbers such as bitter-sweet and green brier, and the self-planting wild cucumber. All these are native except the honeysuckles, and will thrive without cultivation. From time to time I intend to add other rarer wild shrubs and vines, making it a preserve for plants as well as birds. Almost impenetrable in summer, in early fall it is full of wild fruit relished by nearly all its feathered visitors.

Just outside the fence is a concrete bird bath and fountain formed in three shallow pools, one above the other, the lowest of ample diameter and gently sloping bottom. City water is conducted by a hose, permitting a gentle trickle which adds to the attraction of the pools as well as keeping the contents cool and sweet.

By this combination of water and shelter there has been attracted a very interesting variety of birds, which we have had a splendid chance to study almost without leaving the house, a strong binocular bringing any object within close range. Many kinds of birds were seen right at home that we probably could not have found in the open country.

The following list of visitors may be somewhat disappointing to those expecting great results the first season, but I am sure it would have been much increased if closer observations were made in the migration period, and especially early in the morning:

NAME.	DATE.	
Least (or Acadian) flycatcher	March 29th.	
Juncoes	March 31st.	
An unidentified native sparrow	April 8th.	
Another species of native sparrow	Same day.	Fine and unusual song.
Migrant warbler, yellow sides	April 28th.	
Other native sparrows	Same day.	
Maryland Yellow-throat	May 10th.	

Wren bathing in trickle from second basin. The first observed in the water	May 11th.
Chipping sparrow	Same day. This little sparrow and his mate were frequent visitors afterward and nested somewhere near.
Wood thrush	Same day.
Two olive-backed thrushes	May 14th. These migrant thrushes stayed a week or more, and while not in song, became quite familiar.
Ruby-throated hummingbird	May 16th.
Least flycatcher	Same day. Very interesting and unafraid. Stayed a number of days, and used a particular low branch from which it hawked for insects.
Yellow warbler	Same day.
Oven-bird	Same day. This peculiar "high-steeping" little bird also stayed several days, but remained shy and difficult to observe.
Male gold-finch	May 17th.
Strange tiny bird, impossible to identify. Apparently feeding on dandelion seeds, but leaping into the air in a peculiar way at intervals.	May 19th.
Two wood thrushes	June 12th.
Yellow warbler	July 26th.

The wood thrushes made the shelter their home for some time, and we were in hopes would nest there. They became familiar, and did not hsitate to sing when we were quite near. Their lovely voices, heard so closely that every murmur and cadence would be enjoyed fully, was ample reward for whatever trouble and expense the shelter cost.

The above list includes only unusual visitors. Robins, rose-breasts, orioles, thrashers, and other common though delightful residents, are of course present every year without regard to special protection. Neither does it include migrants seen in the trees, although they may have been attracted by the shelter. Worthy of mention, however, is the confidence of one or more female rose-breasts, which resorted to the shelter before the nesting season. These demure sparrowy matrons searched for stray sunflower seeds among the bushes almost within reach of hand, and well illustrated the security most birds seemed to feel in the protection of the thicket. It was not at all uncommon to notice small birds dart into the shelter in the fading twilight, and probably there were many lodgers who escaped notice in daytime.

I am well aware suggestions for a cat-proof fence usually call for a much higher and more elaborate affair than mine, and probably additional protection would be necessary for a shelter distant from dwellings, where it would be left to itself. Nevertheless, my fence is a practical success and not only a safe shelter for the birds, but a source of pleasure and instruction to our family, as well. It has brought the bird-life of woods and fields to our daily view, and many hours have happily passed in watching for new incidents and new visitors.

T. H. WHITNEY.

Atlantic, Iowa.

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Forbush, Edward H., Mass. State Ornithologist, Room 136, State House, Boston. Assoc.

Jenney, C. F., Court House, Boston. Assoc.

Osborn, Arthur A., 58 Washington St., Peabody. Assoc.

Thayer, Hon. John E., Box 98, Lancaster. Sustaining.

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Townsend, C. W., 76 Marlborough St., Boston. Assoc.

Wright, Horace W., 197 Pinckney St., Boston. Assoc.

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Blain, Dr. Alex. W., Jr., 727 Jefferson Ave. E. Detroit. Act.

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King, Helen B., 607 Harrison St., Flint. Assoc.

Mahood, Miss Etta, R. F. D. 1, Rapid City.

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Praeger, W. E., 421 Douglass Ave., Kalamazoo.

Stuart, F. A., Marshall. Assoc.

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Swenk, Prof. Myron H., 3028 Starr St., Lincoln. Act.

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McCreary, Otto, Agr. Exp. Station, Geneva. Assoc.

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Price, Ligon, R. F. D. Route No. 1, Box 44, Dunmore.

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CORRECTIONS TO "LOCAL NAMES OF BIRDS" IN MARCH, 1917, BULLETIN.

Page 74—Name of author; should be McAtee.
Page 75, 126—Genus should be *Stercorarius.*
Page 76, 28—Local name is Bec-a-lance.
Page 76, 30a—usaser should be weaser.
Page 76, 31—plorgeon should be plongeon.
Page 77, 37—Genus should be *Charitonetta.*
Page 77, 46—*candensis* should be *canadensis.*
Page 78, 49—jumper should be pumper; onomatropoeic should be onomatopoeic.
Page 78, 49a—Genus should be *Ixobrychus.*
Page 78, 53—Specific name should be *virescens.*
Page 78, 54—Quaker should be quawker.
Page 79, 68—Genus should be *Pelidna.*
Page 81, 97—Genus should be *Ceryle.*
Page 82, 102—heigh-lo should be heigh-ho.
Page 82, line 17—Tyranniqae should be Tyrannidae.
Page 82, 108a—Generic and specific names should be separated.
Page 82, 109a—Knelies should be Kreelies.
Page 83, line 1—Onometopoeic should be onomatopoeic.
Page 83, 117—*lecophrys* should be *leucophrys.*
Page 83, 125—Pinlar should be Pindar.
Page 84, line 26—Minidae should be Mimidae.
Page 84, 143—Wickenburg should be Wicklenburg.
Page 85, 151—Heckman should be Hickman.
Page 91—Creepr should be Creeper.
Page 91—Chickadock should be Crickadock, and Crickadock should be Crickadoo.
Page 92—Hoitalot should be Hoitalotl.
Page 94—Stripe-yard bird should be omitted.
Page 94—Twillicq should be twillick.

Photo by F. C. Lincoln

The largest Sahuaro we saw. Note the Woodpecker holes and the Gila Woodpecker near the top of the right hand arm

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SOME NOTES OF THE BIRDS OF ROCK CANYON, ARIZONA.

BY F. C. LINCOLN, DENVER, COLORADO.

(With Photographs by the Writer and J. D. Figgins.)

The biological interest attached to the Sonoran life zones, and particularly to the Lower, is readily attested by the number of papers and more lengthy publications treating of these regions.

But despite all that has been written, interest in these wonderful areas is not flagging, nor has the subject been at all exhausted. In fact, in common with many other regions, they have just been surveyed, and the work now before the field and cabinet biologist may be confidently expected to materially enlarge our knowledge of their flora and fauna. Species will be added or eliminated; others discovered as entirely new to science; ranges will be extended; migrations, with schedules of arrivals and departures and other movements of a consequential character be determined; and above all, causes definitely ascertained for the existence or nonexistence of the many characteristic forms.

It was accordingly with much pleasurable anticipation that the writer, accompanied by Messrs J. D. Figgins and A. H. Burns, pitched camp at the mouth of Rock Creek Canyon, on the south side of the Santa Catalina Mountains, under large palo verdes and mesquites on the afternoon of May 7th, 1916, where we were delighted to find ourselves surrounded by con-

ditions ideal beyond our most sanguine hopes. In fact, judging from the results obtained in the vicinity, we concluded it to be the most important, from an ornithological viewpoint, of any for many miles in every direction, due solely to the presence of permanent water with the accompanying luxurient desert vegetation.

The portion of Rock Creek upon which we were located, had its source (at this season) but a scant hundred yards above our camp, disappearing into the thirsty sands about the same distance below; at both places forming large water-holes supporting small clumps of medium-sized cottonwoods, which, during all daylight hours, were literally alive with a great variety of birds. It was in the vicinity of these two sources of water supply with the intervening territory, that the great bulk of our observations were made, the extraordinary abundance of bird-life between and at these points rendering their pursuit useless in the less likely desert regions; though, of course, the latter were carefully studied as well.

In the neighborhood of the water-holes the creek banks rose abruptly; on the west with an almost impenetrable thicket of thorn-bush and mesquite fringing a rugged plain, where the higher growths of deciduous plants fell rapidly away to barren flats of creosote-bush (*Covillea*), cholla (*Opuntia cholla*), and tree cactus (*O. versicolor*), with the beautiful giant cactus or "Sahuaro" (*Cereus giganteus*), either as solitary trunks or gracefully branched like some giant candelabra. This plain stretched clear for twenty-five or thirty miles, broken only by a few rolling hills and the narrow thread of cottonwoods that marked the course of the (now dry) Santa Rita River.

To the east the bank rose sharply to a high stony ridge, rough, hot, and cheerless; covered with masses of the multi-spined cholla, straggling growths of palo verde (*Parkinsonia*) and the ever-present sahuaros. Still on to the east and north rose the beautifully modeled Santa Catalina Mountains, bearing near their summits, heavy growths of cedar

We "pitched camp . . . . under large palo verdes and mesquites"

Photo by F. C. Lincoln

"At the mouth of Rock Creek Canyon, on the south side of the Santa Catalina Mountains"
Photo by J. D. Figgins

and yellow pine, which did much toward softening the dry harshness of the desert below.

The flower season had passed its zenith at the time of our visit, but enough maroon and mahogany-colored flowers remained on the tree cactus, with some big, lemon-yellow blooms on the prickly-pear, to afford an idea of the gorgeousness of the landscape but a short time before. The flowers of the giant cactus were just appearing; the white, waxy clusters forming a crown around the apex of each trunk and arm. We were also fortunate in finding two barrel cacti (*Echinocactus*) in bloom, with flowers of rich burnt-orange color, splashed and mottled with red. The candle-bush, too, (*Fouquieria*) had dropped most of its odd flame-like vermilion spikes and was beginning to send tiny ovate leaves out over each spine. But the palo verde and mesquite were still in full bloom, resembling nothing so much as green and yellow cumulus clouds in the distance, and from the numbers of bees that frequented them it was evident that a supply of sweets was stored in these stern denizens of the waste places. Agaves or century-plants, with a few thread-and-needle plants were found on the rocky slopes and taluses farther up the canyon.

By the last of May the heat was felt severely by our temperately accustomed skins, and contrary to all expectations, we did not find the air exceptionally dry, and we perspired freely. Despite the noon-day heat, however, the nights and mornings were always sufficiently cool to render the use of sweaters a matter of satisfaction, and we slept between heavy blankets with comfort.

The month's work netted a collection of about 225 specimens, representing 52 species and subspecies, which, with observations on 13 others not collected, brought the list up to 65.

The following constitutes the list, with annotations:

Ardea h. herodias—Great Blue Heron. One example was noted at a small water-hole on the Santa Rita May 27th, and again on June 1st.

Oxyechus vociferus—Killdeer. One noted on the Santa Rita May 27th.

Lophortyx gambeli—Gambel's Quail. Plentiful, particularly in the vicinity of the water-holes on Rock Creek. A brood of newly hatched young (still damp) was secured on the 24th of May, while other broods of all ages were of daily note. A set of heavily incubated eggs found on the 26th. Their call-note has a decidedly sarcastic tone and is not infrequently given from the top of a mesquite or palo verde, 20 or 25 feet from the ground.

Zenaidura m. marginella—Western Mourning Dove. Common, but not seen in as great numbers as Melopelia. Very wild. Nest with quarter grown young found May 20th.

Scardafella inca—Inca Dove. Not found in the desert country at all, but very common in the city of Tucson, particularly on the University campus, where specimens were secured. During the heat of the day it was of common note to see from a pair to six or eight close together on a single limb. They are almost domesticated, and in the neighborhood of poultry yards are considered somewhat of a nuisance.

Melopelia a. mearnsi—Western White-winged Dove. Abundant. Frequents the mesquite and cactus-covered foothills, the sahuaros forming their favorite perches. In the evening the calling of the males was incessant, and being quite variable in length and tone, many phrases were readily adaptable. One that could always be counted upon to rouse the ire of the cook at our evening mealtime was, "Who cooks for you? Who cooks for you?" Not infrequently supper was temporarily forgotten by the exasperated culinary artist, who took gun and proceeded to collected the insinuating pigeon.

They feed largely on the berries of the thorn-bush and insects secured from the sahuaros.

The season opens June 1st, much too early, as we found nests containing both eggs and young at a still later date.

Cathartes a. septentrionalis—Turkey Vulture. Common. Five or six seen daily around the mouth of the canyon.

Buteo b. calurus—Western Red-tail. An adult or two seen daily and our camp neighbor, Mr. Harold Bell Wright, had an immature he had captured nearby, for a pet. This bird became very tame and would make no demonstration at being approached.

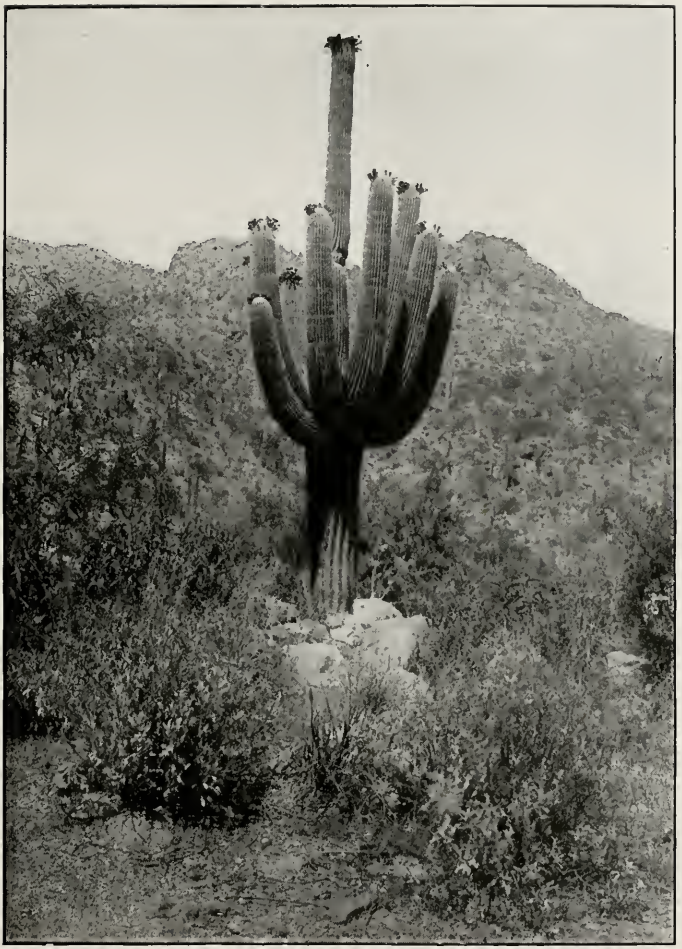
Urubitinga anthracina—Mexican Black Hawk. Rare. I saw one on two occasions on May 24th, but failed to secure it with the light load in my collecting gun. On second observation it was associated with the Vultures.

Aquila chrysaetos—Golden Eagle. Rare; two seen on the banks of the Santa Rita June 1st.

Falco s. phalaena—Desert Sparrow Hawk. Rare. An occasional

"Fringing a rugged plain." Mesquite and cactus flats at the base of the foothills

Photo by J. D. Figgins



Pheto by F. C. Lincaln

A perfect Sahuaro. "Beautifully branched like some giant candelabra"

specimen observed near camp during the latter part of May. Probably the same bird in each case.

Otus a. cineraceus—Mexican Sceech Owl. Rare. An adult female taken at camp by Mr. Figgins, May 27th, the only record.

Micropallas whitneyi—Elf Owl. Common. The most plentiful raptore. Secured a good series of adults with three downy young. The latter taken May 29th. Nest in old Flicker or Gila Woodpecker holes in the sahuaros. Their food seems to consist entirely of insects as, beetles, caterpillars, etc. All specimens but one secured after dark and they are evidently entirely nocturnal.

Bubo v. pallescens—Western Horned Owl. Probably not uncommon in the cedar zone above the desert country, as we would hear them occasionally, but always above us. The Mexicans, however, report them as not infrequent in the lower foothills and canyons.

Geococcyx californianus—Road-runner. Not common; but three examples noted. One secured. One that I followed near the Santa Rita, ran up a sloping tree trunk and endeavored to hide in the foliage. Failing in this it made a short flight, or rather glide, to the earth and again took to its legs to escape.

Dryobates s. cactophilus—Cactus Woodpecker. Rare; only ones noted being a pair that had a nest in a willow at the upper waterhole.

Centurus uropygialis—Gila Woodpecker. Plentiful; more so than any other Picidae. Almost every sahuaro of any size contained their drillings or nests. Extremely pugnacious, the approach of one to a water-hole being sufficient to drive all other birds congregated thereabout into the trees. Much of their food at this season seems to be derived from the flowers of the sahuaros. The young keep up an incessant whining or buzzing noise, which is quite ventriloquil and weird when one stands at the foot of the cactus containing the nest.

Colaptes chrysoides—Gilded Flicker. Common. Nest very early, as fully fledged young were flying about at the first of May.

Phalaenoptilus n. nuttalli—Poor-will. Rare. On the evenings of the 11th and 12th one was repeatedly heard near camp, but all subsequent work failed to flush the specimen.

Chordeiles a. texensis—Texas Nighthawk. Common; especially so in the evenings around the water-holes and camp. Flushed one pair evidently preparing to nest. The male kept close to and a little above the female, at times so close as to touch her with the tips of his wings. Almost no note at all. No boom as with *virginianus.*

Aeronautes melanoleucus—White-throated Swift. Common. Nests in the cliffs higher in the canyon, but descends to the mouth regularly in the evenings to feed.

Archilochus alexandri—Black-chinned Hummingbird. Hummingbirds were of common note, but as the majority were females or immatures, visual identification was impossible. In point of relative abundance, however, *alexandri* probably ranked next to *calypte costae*. All hummers fed readily from the various cactus flowers, as well as those of the mesquite and palo verde, heavy pollen stains marking every specimen secured.

Calypte costae—Costa's Hummingbird. Common. Probably the most plentiful of the *Trochilidae*. Mr. Figgins had an interesting experience with one of these birds while sketching under his umbrella. The bird, a female, was fearlessly curious and repeatedly came under the umbrella and perched on the ribs, or the canvas, once flying so close to his face that he (Mr. F.) forgetting the protection afforded by his glasses, shut his eyes for fear the bird would strike at them.

The males fight furiously, as is the case with all other *Trochilidae* that I have observed. One fight that I witnessed, kept up for fully five minutes, when the vanquished bird flew off, while the victor, too exhausted to pursue, perched nearby to preen his feathers.

Selasphorus platycercus—Broad-tailed Hummingbird. Uncommon, if not actually rare. Only one secured, a female, on the 20th.

Tyrannus verticalis—Arkansas Kingbird. Fairly common, with *vociferans* and *Myiarchus* around the camp. Found only in the vicinity of water.

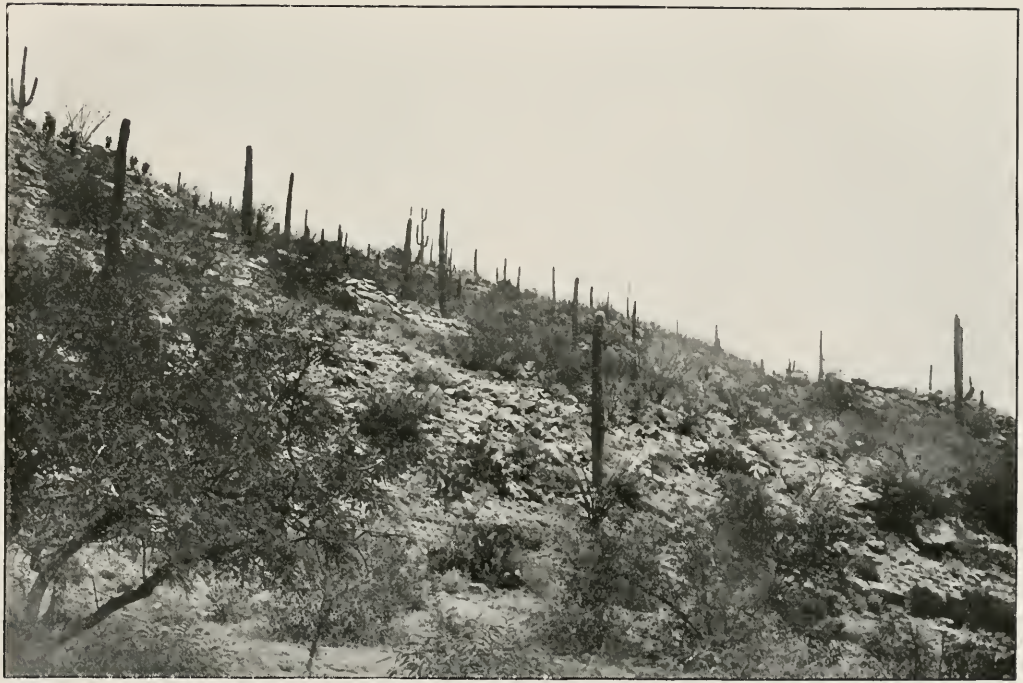
Tyrannus vociferans—Cassin's Kingbird. Rather more numerous than *verticalis*.. Usually found with them.

Myiarchus m. magister—Arizona Crested Flycatcher. Plentiful. The two forms of *Myiarchus* kept up, with the assistance of the Kingbirds, a continual fight in the vicinity of our camp. Their call-note may be likened to "Come 'er, Come 'er, Come 'er," uttered rapidly with the accent on the "er." It is quite noticeable that if another bird accepts the invitation, a fight is the inevitable result. A few of their nests were found in woodpecker excavations in the sahuaros, usually with incubated eggs, and the ever-present piece of shed snake-skin. This last is remarkable since we found snakes decidedly rare. This form was always found along streams, never in the open desert, as was *cinerascens*.

Myiarchus c. cinerascens—Ash-throated Flycatcher. Found in about the same numbers as *migister*, but more frequently in the creosote covered foothills.

Sayornis nigricans—Black Phœbe. Rather rare. Secured an adult the first day in camp and two immatures subsequently.

Nuttallornis borealis—Olive-sided Flycatcher. Not common. A couple of specimens secured early in May, probably migrants to the higher country.



"A high, stony ridge, ... covered with masses of the multi-spined cholla, straggling growths of palo verde, and the ever-present sahuaros"

Photo by J. D. Figgins

Myiochanes r. richardsoni—Western Wood Pewee. Not uncommon along Rock Creek and the Santa Rita.

Empidonax difficilis—Western Flycatcher. Fairly common. Seen daily along the creek.

Pyrocephalus r. mexicanus—Vermilion Flycatcher. Not common. Two pair seen near Tucson and three others secured at Rock Creek and the Santa Rita. At the latter place they exhibited a marked preference for low perches, often alighting on wire fences. There is certainly no protective coloration with this species as it shows out vividly at all times.

Corvus cryptoleucus—White-necked Raven (?). En route from Deming, New Mexico, numbers of Ravens were noted that I believe were this variety. A few were occasionally seen flying over camp, although the flats of tall yucca plants seemed to be their preferred habitat.

Molothrus a. obscurus—Dwarf Cowbird. Shortly after we located camp numbers of these birds flew over, one of which was secured.

Icterus parisorum—Scott's Oriole. Rare. A nest containing three heavily incubated eggs found on the 26th. Female secured. Another pair collected at the upper water-hole on the 30th. This last female had much black on the head and throat; a rare occurrence.

Icterus c. nelsoni—Arizona Hooded Oriole. Common. Frequented the cottonwoods above and below camp and was very common along the Santa Rita. Found a nest on the 28th on a dead Yucca stalk, twenty feet from the ground, containing four fresh eggs.

Carpodacus m. frontalis—House Finch. Plentiful. Found in the open desert and along the water-courses. A small bunch could be found at the water-holes during all hours of the day. The candle-bush was preferred for perching places. The males of this region are remarkably brilliant; much more vermilion than any in my series of Colorado specimens. This may be the result of the intense sunlight.

Astragalinus p. hesperophilus—Green-backed Goldfinch. Rare in the vicinity of the canyons, but found in some numbers along the Santa Rita.

Chondestes g. strigatus—Western Lark Sparrow. Rare. None seen on Rock Creek, but a few seen along the road near the Santa Rita.

Amphispiza b. deserticola—Desert Sparrow. Not uncommon, but more often heard than seen. A juvenile, just out of the nest, was secured May 23d.

Pipilo f. mesoleucus—Canyon Towhee. Common. Frequents the more open brushy hillsides. Was also noted daily at the water-holes.

Oreospiza chlorura—Green-tailed Towhee. Rare. A few migrants to the higher slopes came through on the 14th and 15th.

Cardinalis c. superbus—Arizona Cardinal. Fairly common along the water-courses. Their song is quite different from that of true *cardinalis* of the east.

Zamelodia melanocephala—Black-headed Grosbeak. Common. Apparently nests in the mesquite and thorn-bush.

Passerina amoena—Lazuli Bunting. Rare. Only record, a male taken on the Santa Rita May 27th.

Piranga ludoviciana—Western Tanager. Plentiful. I have never found this variety as abundant as it was here, nor the males as brilliantly colored. They were exceptionally fat, however, and several specimens were lost through the exudation of oil from the shot-holes.

Piranga r. cooperi—Cooper's Tanager. Rare. Not seen at camp, but one was secured at the river and another seen. A fine male was also observed on the University campus at Tucson.

Tachycineta t. lepida—Northern Violet-green Swallow. Fairly common around camp at times, although it apparently nests farther up in the hills.

Bombycilla cedrorum—Cedar Waxwing. A flock of five of these birds flew into the trees at camp on the 26th. Two were killed, but one could not be recovered from the dense thorn-bush into which it fell.

Phainopepla nitens—Phainopepla. Plentiful at camp and on the river bottoms. The young were out of the nests and their cat-like calling was at times incessant around the water-holes.

Lanius l. excubitorides—White-rumped Shrike. Not common. Found principally in the lower mesquite desert.

Vireosylva g. swainsoni—Western Warbling Vireo. Rare. The only record is a specimen killed at camp on the 17th.

Vireo b. arizonae—Arizona Vireo. Plentiful. Frequents the densest thickets, and their plumage was badly worn from continual passage through the brush.

Vermivora luciae—Lucy's Warbler. Seemingly not uncommon, but difficult to raise from the heavier growths of mesquite, etc. Three specimens were secured.

Dendrioca a. sonorana—Sonoran Yellow Warbler. Rare. A single female secured on the 24th, with two or three seen subsequently, my only records.

Dendroica townsendi—Townsend's Warbler. Rare. A male was secured on the 25th on the open desert.

Icteria v. longicauda—Long-tailed Chat. Not common. A few seen near camp and on the Santa Rita.

Wilsonia p. pileolata—Pileolated Warbler. Not uncommon at camp for a few days during the latter part of May.

Mimus p. leucopterus—Western Mockingbird. Not uncommon; usually found in the desert. Only occasionally heard singing.

Toxostoma c. palmeri—Palmer's Thrasher. Abundant. By far the most numerous bird and one of the few found any distance from the water-courses in the desert. One brood of young had already been raised and many nests were found containing eggs and young in all stages of development. Their call-note may be readily adapted to the phrase "Pretty quick," with the accent on the "quick."

Nests were usually placed in the chollas, but some were found in the mesquites and palo verdes.

Catherpes m. conspersus—Canyon Wren. Rare. Heard on one or two occasions in the canyon above camp.

Heleodytes b. couesi—Cactus Wren. Plentiful. The most characteristic bird of the cactus desert. They also had raised one brood and were engaged in caring for the second at the time of our visit. A few sets of eggs (both fresh and incubated) were also found. Nest almost invariably placed in a cholla; only one found not so placed, and that in a palo verde.

Auriparus f. flaviceps—Verdin. Not uncommon, and their retort-shaped nests were found in numbers, though usually unoccupied. We succeeded, however, in securing two sets of young just ready to leave the nest. Their plumage was much frayed out, but when one considers the combing that the feathers of many of these desert birds are subjected to it, it is more surprising that they retain any body covering at all. Nevertheless, we found very few spines in birds' feet, and saw absolutely no evidence that would lead us to believe more serious tragedies of common occurrence.

Polioptila plumbea—Plumbeous Gnatcatcher. Plentiful. Adults and fully grown young found everywhere. Most abundant in the dry water-courses near the main stream.

Hylocichla u. ustulata—Russet-backed Thrush. Not common. (Rare)? For a few days during the latter part of May thrushes were not uncommon, and I took one on the 24th, thinking it to be *u. swainsoni*, but upon comparing it with California specimens of true *ustulata* at the Museum, I am satisfied it should be so referred, though I cannot, of course, state positively that all *Hylocichla* seen were of the same variety, and it is quite possible that a large series would have contained both forms in more or less equal numbers.

SOME LOCAL NAMES OF BIRDS.

BY W. L. M'ATEE.

In 1911 the writer published [1] a list of local names of birds, chiefly intended to supplement Gurdon Trumbull's most interesting compilaton [2] of vernacular names of game birds. The present list has a similar object, since it deals largely with water and shore birds, but like the former catalog it includes unusual cognomens for a variety of other species.

The principal sources of the informaton presented in the following pages are field experiences of the writer on trips for the United States Biological Survey, a manuscript catalog by L. O. Pindar of birds names in use about Hickman, Ky., and fugitive references to bird nicknames in Forest and Stream and elsewhere. The names given in a brief but interesting list by H. H. Brimley (see bibliography) are among those incorporated. Mr. Francis Harper has kindly contributed numerous names in use at Beaufort, N. C., and on Long Island, N. Y. The principal localities at which the writer made lists of local names since the publication of his first paper on the subject are Matinicus Id., Maine, Wallops and Revels Ids., Virginia, and Willapa Harbor, Washington. The Wallops Id. material is supplemented by a manuscript list kindly prepared by Dr. B. H. Warren. The present catalog of names is indexed so that it may be used as a supplement to other glossaries.

COLYMBIDAE.

1. *Aechmophorus occidentalis.*—Silver loon, silver diver, Willapa Harbor, Wash.

2. *Colymbus holboelli.*—Bobtail, Shitepoke, Wear hen (so called because they perch on projecting parts of fish-wears), Matinicus Id., Me.; sheldrake loon, Patchogue, L. I.; pinquin, pinquint, Wallops Id., Va.; red-eyed devil, sinker, Willapa Harbor, Wash.

3. *Podilymbus podiceps.*—Tad, Wallops Id., Va.; culotte, Marksville, Ia. The latter word, the French term for breeches, is amusingly appropriate for a bird whose feet only portrude beyond its feathers.

[1] Forest and Stream, 77, pp. 172-174 and 196-197.

[2] Names and Portraits of Birds, 1888.

GAVIIDAE.

4. *Gavia immer.*—Adult is pond loon; young, sheep loon, Plymouth, Mass. (Browne); loo, Newfoundland (Harvey); warloon, Hickman, Ky. (Pindar).

5. *Gavia arctica.*—Grayback loon, Plymouth, Mass. (Browne).

6. *Gavia stellata.*—Peggin'-awl loon, Matinicus Id., Me.; peggin'-awl, pegmonk, Plymouth, Mass. (Browne); Quaker loon, Willapa Harbor, Wash.

ALCIDAE.

7. *Lunda cirrhata.*—Parrot-bill, Bering Sea (information given me by a sailor); Jew duck (in recognition of the Semitic profile), Willapa Harbor, Wash.

8. *Fratercula arctica.*—Parakeet, Matinicus Id., Me.

9. *Brachyramphus marmoratus.*—Fog-bird, Willapa Harbor, Wash.

10. *Alca torda.*—Pinwing, Newfoundland (Forest and Stream, 2, No. 16, May 28, 1874, p. 244).

11. *Alle alle.*—Pine knot, Plymouth, Mass. (Browne); also Matinicus Id., Me., ice-bird, Matinicus Id., Me., Northeastern Banks (Collins).

STERCORARIIDAE.

12. *Megalestris skua.*—Sea hen, Northeastern Banks (Collins).

12a. *Stercorarius spp.*—Marlin-spike birds, Coast of Maine; marling-spikes, gull chasers, Northeastern Banks (Collins).

12b. *Stercorairus longicaudus.*—Whip-tail, Northeastern Banks (Collins).

LARIDAE.

13. *Rissa tridactyla.*—Squaretail or bay gull, Plymouth, Mass. (Browne); winter gull, Wallops Id., Va.; this name and pinyole, Northeastern Banks (Collins).

14. *Larus Marinus.*—Farmer gull, Grand Menan, N. B. (Forest and Stream, 13, No. 1, Aug. 7, 1879, p. 524); saddle-backed gull, Matinicus Id., Me.; Daniel gull, Plymouth, Mass. (Browne); winter gull, Wallops Id., Va.

15. *Larus argentatus.*—Adult is white gull; young, gray gull, Plymouth, Mass. (Browne); winter gull, Wallops Id., Va.

16. *Larus delawarensis.*—Squeezy gull, Newfoundland (Harvey).

17. *Larus philadelphia.*—Square-tail gull, Plymouth, Mass. (Browne); codfish gull, Wallops Id., Va.

18. All terns.—Mackerel gulls, Plymouth, Mass. (Browne); Connecticut shore (Morris).

19. *Gelochelidon nilotica.*—Big striker, Wallops Id., Va.

20. *Sterna caspia, Stern maxima.*—Gannet striker, Wallops Id., Va., the latter big striker at Beaufort, N. C.

21. *Sterna hirundo.*—Petney, mackerel or medric gull and medric, Matinicus Id., Maine; big striker, Wallops Id., Va.; striker, Beaufort, N. C.

22. *Sterna antillarum.*—Little striker, Wallops Id., Va.

23. *Hydrochelidon nigra surinamensis.*—Adult is black striker. young, pigeon gull, Wallops Id., Va.

RHYNCHOPIDAE.

24. *Rhynchops nigra.*—F. M. Chapman gives (Country Life in America, 3, No. 2, Dec. 1902, p. 85) black skimmer, cutwater, shearwater, scissor-bill and flood gull as names for this species on the coast of Virginia. The last name is in use at Wallops Id., and Shearwater is used at Beaufort, N. C., also.

PROCELLARIIDAE.

25. *Petrels.*—Old sailors' souls; so-called by down-east mariners.

25a. *Fulmarus glacialis.*—Noddy, marble-header, oil-bird, Northeastern Banks; striker, West Coast (Collins).

25b. *Puffinus gravis.*—Hag, hagdon, Northeastern Banks (Collins).

25c. *Puffinus griseus.*—Black hagdon, Northeastern Banks (Collins). Shearwaters are known as haglets at Montauk, Long Island.

PHAETHONTIDAE.

26. Tropic-birds.—Bos'n; a name widely used among sailors for these birds.

SULIDAE.

27. *Sula bassana.*—Winter gannet, Wallops Id., Va.

ANHINGIDAE.

28. *Anhinga anhinga.*—Bec-alance (lance-bill), Marksville, La.

PHALACROCORACIDAE.

29. *Phalacrocorax auritus.*—Water buzzard, Autaugaville, Ala., (A. H. Howell); Bogue Sound lawyer (presumably referring to conspicuous vocalization), Beaufort, N. C. The name nigger goose which I previously recorded as being used for cormorants along the Gulf Coast is also heard at Beaufort, N. C., and Great South Bay, Iong Island.

30. *Mergus serrator.*—Shell-bird, Muskeget Id., Mass., jack, Hickman, Ky. (Pindar).

30a. *Mergus americanus.*—Woozer, universally used at Patchogue, Long Island, but apparently unknown a few miles east or west (Harper). This name seems to be an evolutionary product of "usaser," mentioned by Trumbull as being used at various points on Long Island.

31. *Lophodytes cucullatus.*—Zin-zin, plorgeon, diver, Marksville, La.

32. *Anas platyrhynchos.*—Black duck, Cape Hatteras, N. C. (Brimley).

33. *Anas rubripes.*—Black-jack, Hickman, Ky. (Pindar) It is interesting to note that the much-discussed forms or subspecies of northeastern black ducks are recognized in local nomenclature at Indian River, Delaware (Pennock, Cassinia, 1907, p. 38). The black-legged form is known as nigger black duck, and the other as red paddle.

34. *Spatula clypeata.*—Shovel-mouth, Oakley, S. C.

35. *Marila affinis.*—Cotton-tail bluebill, Wallops Id., Va.; pol-ridge, Willapa Harbor, Wash. I have wondered whether the latter name was not originally porridge, which clearly would be another allusion among vernacular names of this species to its habit of gathering in dense masses.

36. *Clangula clangula americana.*—Pie duck, Newfoundland (Harvey); fiddler duck, Mississippi Sound, Ala. (A. H. Howell).

37. *Chartonnetta albeola.*—Salt-water teal (Hallock, Forest and Stream, 15, No. 21, Dec. 23, 1880, p. 406); dipper duck, Montauk, Long Island.

38. *Harelda hyemalis.*—Old mammy, Bay Shore, Long Island, mammy duck, Wallops Id., Va.; knock molly, Cape Hatteras, N. C. (Brimley); Jay-eye-see (this soubriquet of a celebrated race horse undoubtedly is applied to the old-squaw in allusion to its speed), and o-i (a corruption of old wife?), Willapa Harbor, Wash. There are more than thirty local names for the old squaw known to be in use in the United States.

39. *Somateria dresseri.*—Ducks and drakes, canvasback, Matinicus Id., Me.; sea coot, Connecticut shore (Morris).

40. *Somateria spectabilis.*—King bird, Newfoundland (Harvey); mongrel drake, Matinicus Id., Me.

41. *Oidemia deglandi.*—Ice duck, Wallops Id., Va.; bay coot, Willapa Harbor, Wash.

42. *Oidemia perspicillata.*—'Scovy, Wallops Id., Va.; river coot, Willapa Harbor, Wash.

43. *Erismatura jamaicensis.*—Sleeping booby, Wallops Id., Va., sleepy jay, sinker, Willapa Harbor, Wash. I repeat the name pin-tail, given by Trumbull for northeastern Maryland, in order to emphasize its wide distribution on the Pacific Coast. It is the usual name at Willapa Harbor, Wash., and is known to be used as far south as Fresno, Calif. (Tyler). Fully 75 local names for the ruddy have been recorded as used in the United States.

44. *Chen hyperboreus nivalis.*—Bald brant, Wallops Id., Va.

45. *Anser albifrons gambeli.*—Yellow-legs, yellow-legged goose, Willapa Harbor, Wash.

46. *Branta candensis.*—Outarde, brant, Marksville, La.

47. *Branta canadensis hutchinsi.*—Bernaise, brant, Marksville, La.; little honkers, China geese, Fresno, Calif. (Tyler).

PLATALEIDAE.

48. *Ajaia ajaja.*—Flamingo, Corpus Christi, Tex. (Johnson, S. M., Forest and Stream, 13, No. 6, Sept. 11, 1879, p. 625).

ARDEIDAE.

49. *Botaurus lentiginosus.*—Years ago J. E. Todd published (see bibliography) a list of names for the bittern of which the following presumably were gathered in the United States: bog-bull, bog-bumper, garde-soleil, Indian hen, Indian pullet, look-up, mire-drum, poke, stake-driver, thunder-pumper, and water-belcher. In order to have in one place a fairly complete catalog of nicknames for the bittern, I have gathered the following from various sources: barrel-maker, Michigan (Cook); bog-hen, Maine (Knight); bog trotter, Michigan (Gibbs), butter-bump, Concord, Mass. (Bergen); corker (caulker), Newfoundland (Harvey, also Forest and Stream, 3, N. 13, Nov. 5, 1874, p. 196); dunk-a-doo, New Jersey (Wilson); flying fox, Indian River, Delaware (Pennock, Cassinia, 1907, p. 35); night-hen, Massachusetts (Nuttall); plum-pudden, Michigan (Gibbs); plunkett, Plymouth, Mass. (Browne); post-driver, Illinois (Ridgway); jumper, Minnesota (Hatch); quock, Wallops Id., Va.; shite-poke, Maine (Knight); Matinicus Id., Me.; sibitron, Newark and Flemington, N. J. (E. R. Kalmbach), probably residuum of the phase "it's a bittern"; sun-gazer, Chef Menteur, La.; thunder-pump, Illinois (Forest and Stream, 6, No. 21, June 29, 1876, p. 237); vison-la, Marksville, La.; wop, Wallops Id., Va. Of these 30 names, while 17 allude to the bird's remarkable vocal efforts, only 5 are really onomatropoeic; 9 refer to habits of the bittern and 7 are of other categories.

49a. *Ixbrychus exilis.*—Citron (undoubtedly a corruption of bittern), near Alexandria, Va.

50. *Ardea herodias.*—Cranky (a good name for this species, which scolds so vehemently when disturbed), Wallops Revels and Cobbs Ids., Va.; jo, grand-jo, Marksville, La.; jim, Hamburg, La., Blue, fish or gopher crane, Fresno, Calif. (Tyler).

51. *Herodias egretta.*—White crane, piglin, Hickman, Ky. (Pindar).

52. *Hydranassa tricolor ruficollis.*—Poor jo, Beaufort, N. C.

53. *Butorides virecens.*—Scouck, Wallops Id., Va.; scout, Smith Id., Va., Beaufort, N. C.; cow-cow, Marksville, La. All these names are onomatopoeic.

54. *Nycticorax nycticorax naevius.*—Quaker, Montauk, Long Island, Wop, Revels Id., Va., winter gros-bec, butor, huac, Marksville, La.

GRUIDAE.

55. *Grus americana.*—Gourd head, white crane, Hickman, Ky. (Pindar).

RALLIDAE.

56. *Rallus elegans.*—Double rail, Newbern, N. C. (Brimley).

57. *Rallus virginianus.*—Single rail, Newbern, N. C. (Brimley).

58. *Gallinula galeata.*—Rale, Hamburg, La.

59. *Fulica americana.*—Chicken duck, chicken-bill, Wallops Id., Va.; water guinea, Leighton, Ala. (A. H. Howell); water guinea hen, Mother Carey's chicken, Hickman, Ky. (Pindar).

PHALAROPODIDAE.

60. *Phalaropus fulicarius.*—Herring bird, Jersey geese, coast of Nova Scotia.

61. *Lobipes lobatus.*—Herring bird, Jersey geese, Coast of Maine; whale-bird, Massachusetts (Shooting and Fishing, 16, No. 11, July 5, 1894, p. 205).

RECURVIROSTRIDAE.

62. *Recurvirostra americana.*—Tilter, Corpus Christi, Tex. (Johnson, S. M., Forest and Stream, 13, No. 6, Sept. 11, 1879, p. 625); sickle-bill, Willapa Harbor, Wash.; yellow snipe, Fresno, Calif. (Tyler).

SCOLOPACIDAE.

63. *Philohela minor.*—Night-flit, Currituck, N. C. (Brimley).

64. *Macrorhamphus griseus.*—Dowits, Long Island, N. Y. (Forest and Stream, 7, 1876, p. 149). Name said to be derived from a note of the bird, a theory different from that given by Trumbull (p. 160).

65. *Micropalama himantopus.*—Frost snipe, New Jersey (Holberton); bastard yellowlegs, Wallops Id., Va.

65a. *Pisobia maculata.*—Hay plover, Wallops Id., Va.

66. *Pisobia fuscicollis.*—White-tailed stib, Plymouth, Mass. (Browne).

67. *Pisobia minutilla and Ereunetes pusillus.*—Ox-eye, bumble-bee, New Jersey (Holberton); mud-suckers, little birds, bumble-bees, Wallops Id., Va. Bumble-bee peep is used on Cape Cod (Cahoun), and the generic name for small sandpipers on Nantucket is peckies (B.).

68. *Pelinda alpina sakhalina.*—Smutty-breast, Wallops and Revels Ids., Va.; winter birds, the former; winter ox-eye, Cape Cod, Mass. (Murdoch).

69. *Calidris leucophaea.*—Skinner, Plymouth, Mass. (Browne); bull-peep, Cape Cod, Mass. (Cahoon); strand or surf snipe, Long Id., N. Y. (Forest and Stream, 7, 1876, p. 149); clayton, Wallops Id., Va.

70. *Limosa fedoa.*—Marlin curlew, Wallops Id., Va.

71. *Totanus* probably *melanoleucus.*—Yellow-shanked sandpiper twillick, nasary (Townsend, 1911, gives auntsary), Newfoundland (Harvey).

72. *Actitis macularia.*—Sandbird, Matinicus Id., Me.; teeter-peep, Essex Co., Mass. (Townsend); teeter, steel-yard bird, Long Id., N. Y. (Forest and Stream, 7, 1876, p. 149); jerk-or perk-bird, Wallops Id., Va. This and other small sandpipers are known as gray-backs, maggot-eaters and sea-chickens at Beaufort, N. C.

73. *Numenius longirostris.*—Turkey curlew, Prince Edward Id.

CHARADRIIDAE.

74. *Oxyechus vociferus.*—Dotterel, Iowa (Hapgood).

75. *Aegialitis semipalmata.*—Beach-bird, New Jersey (Holberton).

76. *Aegialitis meloda.*—Beach-bird, Plymouth, Mass. (Browne); mourning bird, pale ringneck, Cape Cod, Mass. (Cahoon); stone runner, Long Id., N. Y. (Forest and Stream, 7, 1876, p. 149).

77. *Ochthodromus wilsonius.*—Ring-neck, Wallops Id., Va.

APHRIZIDAE.

78. *Arenaria interpres.*—Chicaric, Plymouth, Mass. (Browne); maggot-eater, Wallops Id., Va., Cape Lookout, N. C., Brimley. Trumbull comments on Wilson's name Horse-foot snipe, and although he could not find it in use, expresses his faith in local names by remarking "yet in some out-of-the-way corner," the turnstone "may still be the Horse-foot snipe as it was in Wilson's time" (p. 185). However, Giraud (Birds of Long Island, 1844, p. 221) notes the use of this name at Egg Harbor, and virtually the same name, that is, king-crab bird, is now in use at Beaufort, N. C. (Harper). Both refer to the turnstone's fondness for eggs of the horse-shoe crab.

HAEMATOPODIDAE.

79. *Haematopus palliatus.*—Sea-crow, Wallops Id., Va.

TETRAONIDAE.

80. *Bonasa umbellus.*—Wood-pile quawker, Long Island, N. Y. (Forest and Stream, 12, No. 3, Feb. 20, 1879, p. 49).

81. *Lagopus rupestris.*—Mountain partridge, Newfoundland (Harvey).

82. *Pedioecetes phasianellus.*—Bur-oak grouse, Southern Wisconsin, Northern Illinois (Forest and Stream, 13, No. 10, Oct. 9, 1879, p. 705).

CATHARTIDAE.

83. *Cathartes aura septentrionalis.*—Cara-crow, Marksville, La.

84. *Catharista urubu.*—South Carolina buzzard, Beaufort, N. C.

BUTEONIDAE.

85. *Elanoides forficatus.*—Forked-tailed hawk, Hickman, Ky. (Pindar).

86. *Circus hudsonius.*—Meadow-hawk, Revels Id., Va., Hickman, Ky., (Pindar).

87. *Accipiter velox.*—Privateer, Wallops Id., Va.

88. *Astur atricapillus.*—Blue hawk, Nova Scotia (Forest and Stream, 12, No. 13, May 1, 1879, p. 245).

89. *Buteo sp.*—Up-the-country boy, Chestertown, Md., among negroes (Bergen). This name, together with those quoted in my former list for the marsh hawk and swallow-tailed kite, indicates a general use among negroes of the term "boy" for hawks.

90. *Haliœëtus leucocephalus.*—Grepe, Newfoundland (Harvey).

FALCONIDAE.

91. *Falco islandus* (?).—White hawk, Newfoundland (Harvey).

92. *Falco columbarius.*—Privateer, Wallops Id., Va.

93. *Falco sparverius.*—Mouse hawk, Hickman, Ky. (Pindar).

STRIGIDAE.

94. *Otus asio.*—Field, little gray, mottled, rat or red owl, Hickman, Ky. (Pindar).

CUCULIDAE.

95. *Geoccoccyx californianus.*—For some time I have had on hand a collection of local names for this species. It is here presented in alphapetical order, practically without annotation: California hen, California peacock, chachalaca, chaparral, chaparral bird, cock, or fowl, churca (also, if not a misprint, churea), corporal, correo del camino (there are several variants of this, most of them erroneous; exceptions may be correcamino and correo del paisano), el caporal, ground cuckoo, hoitlalotl, lizard bird, long-tailed pheasant, medicine bird, Mexican peafowl, paisano, pajaro, prairie cock, racer, rattle-snake killer, road-runner, snake killer, war bird.

96. *Coccyzus americanus.*—Chow-chow, phantom or spirit bird, Hickman, Ky. (Pindar).

ALCEDINIDAE.

97. *Ceryl alcyon.*—Martin pecheur, Marksville, La.

PICIDAE.

98. *Dryobates villosus.*—Big sapsucker, wood-knocker, Hickman, Ky. (Pindar).

99. *Dryobates pubescens.*—Little sapsucker, Hickman, Ky. (Pindar).

100. *Phloetomus pileatus.*—Great black woodpecker, Newfoundland (Harvey); poule de marais, Indian hen, Marksville and Hamburg, La.

101. *Asyndesmus lewisi.*—Apple bird, Bitter-root Valley, Montana (V. Bailey).

102. *Colaptes auratus.*—It never seems impossible to find a few more local names for the flicker. Frank L. Burns has recently (see bibliography) brought up to date the list of flicker names, which reaches a total of 132. It is worth noting, however, that neither this nor his previous list contain the variants "heigh-lo" and "wick-up," which are quoted in standard works. Burns records the name "wheeler" as being used in Maryland; with the prefix "yallow," this name is used on Wallops Id., Va., where we hear also "yallow whicker." Charles Hallock cites the name "Whittaker" from eastern Carolina (Forest and Stream, 51, No. 27, Dec. 31, 1898, p. 525).

MICROPODIDAE.

103. *Chaetura pelagica.*—Chimney sweeper, Hickman, Ky. (Pindar).

TYRANNIQAE.

104. *Muscivora forficata.*—Bird of paradise, Texas (A. D. Lecompte (Amer. Field, Vol. 27, No. 9, Feb. 26, 1887, p. 200).

104a. *Tyrannus tyrannus.*—Betty martin, Wallops Id., Va.; dishwasher, Texas (E. D. Lecompte, Amer. Field, Vol. 27, No. 9, Feb. 26, 1887, p. 200).

105. *Sayornis phœbe.*—Tick bird, Dothan, Ala. (A. H. Howell); bridge, moss, preacher, or spider bird, Hickman, Ky. (Pindar).

CORVIDAE.

106. *Cyanocitta cristata.*—Silken jay, Newfoundland (Harvey).

107. *Perisoreus obscurus.*—This species apparently receives the same cognomens by which *canadensis* is variously known. I heard camp-bird, camp-robber, elk-bird, and tallow-bird in western Washington.

108. *Perisoreus canadensis.*—Meat-bird, Alaska.

108a. *Corrusbrachyrhynchos.*—Two cognomens heard by Francis Harper at Patchogue, Long Island, namely Coram duck and Bald Hill parrot, embody the names of nearby villages, which the residents of Patchogue delight to couple in sarcastic vein with that of the despised crow.

109. *Cyanocephalus cyanocephalus.*—Blue crow (Coues, E., Chicago Feld, 7, No. 22, July 14, 1877, p. 359).

STURNIDAE.

109a. *Sturnus vulgaris.*—E. R. Kalmbach gives me the following names used in New Jersey: Church-martin, Monmouth Co., a very appropriate name, alluding to the bird's fondness for belfries and also to its martin-like appearance in flight; Knelies, Medford,

and star, Nutley. Of its two names the former is onometopoeic, the latter a European importation.

ICTERIDAE.

110. *Dolichonyx oryzivorus.*—Skunk blackbird, meadow-wink, Hickman, Ky. (Pindar).

111. *Molothrus ater.*—Lazy-bird, Hickman, Ky. (Pindar).

112. *Icterus galbula.*—English robin, Bernardston, Mass. (Bergen); fire-bird, golden robin, golden oriole, Hickman, Ky. (Pindar).

113. *Sturnella magna.*—Meadow starling, marsh quail, Hickman, Ky. (Pindar).

114. *Quiscalus quiscula.*—Green-head blackbird, Hickman, Ky. (Pindar).

FRINGILLIDAE.

115. *Loxia leucoptera.*—Spruce bird, Newfoundland (Harvey).

116. *Astragalinus tristis.*—Tweet, seedeater, Hickman, Ky (Pindar).

117. *Zonotrichia lecophrys.*—Stripe-headed sparrow, Hickman, Ky. (Pindar).

118. *Spizella monticola.*—Winter chip-bird, Hickman, Ky. (Pindar).

119. *Spizella passerina.*—Nixie (the young), New England (Bergen); chipsney, twit-sparrow, Hickman, Ky. (Pindar).

120. *Spizella pusilla.*—Bush-bird, bush-sparrow, Hickman, Ky. (Pindar).

121. *Junco hyemalis.*—Rain-bird, Hickman, Ky. (Pindar).

122. *Passerella iliaca.*—Hedge sparrow, Newfoundland (Harvey); big sparrow, Hickman, Ky. (Pindar).

123. *Pipilo erythrophthalmus.*—Owhee, chowee, chewing (Forest and Stream, 13, No. 20, Dec. 18, 1879, p. 907); ground or marsh robin, bullfinch, Hickman, Ky. (Pindar).

124. *Pipilo maculatus oregonus.*—Robin, Oyster Bay, Wash.; blackbird, Willapa Harbor, Wash.

125. *Guiraca caerulea.*—Wheat-bird, Hickman, Ky. (Pinlar).

126. *Passerina cyanea.*—Summer bluebird, Hickman, Ky. (Pindar).

127. *Passerina ciris.*—English robin, Gloucester, N. C.

TANAGRIDAE.

128. *Piranga erythromelas.*—Fire bird, pocket-bird, black-winged redbird, redbird, Hickman, Ky. (Pindar).

129. *Piranga rubra.*—Rose tanager, beebird, Hickman, Ky. (Pindar).

HIRUNDINIDAE.

130. Swallows in general.—Rain-birds, Va., Ky., and La.

131. *Progne subis.*—Big, black, house, or large martin, Hickman, Ky. (Pindar).

132. *Hirundo erythrogastra.*—Forked-tailed swallow, Hickman, Ky. (Pindar).

133. *Riparia riparia.*—Sand swallow or martin, bee-martin, Hickman, Ky. (Pindar).

BOMBYCILLIDAE.

134. *Bombycilla cedrorum.*—Rice-bird, paroquet, Hickman, Ky. (Pindar); canker-bird, from its habit of feeding on canker worms, Taunton, Mass. (Baylies, Forest and Stream, 10, No. 17, May 30, 1878, p. 319).

LANIIDAE.

135. *Lanius ludovicianus.*—French mocking bird, Southern States (Forest and Stream, 8, No. 4, March 1, 1877, pp. 49-50); moquer sauvage, Indian mockingbird, Marksville, La.

MNIOTILTDAE.

136. Warblers in general.—Blossom birds, Missouri (43rd Ann. Rep. State Hort. Soc., 1901, p. 332).

137. *Mniotilta varia.*—Tree creeper, Hickman, Ky. (Pindar).

138. *Dendroica aestiva.*—Yellow hammer, Newfoundland (Harvey).

139. *Dendroica coronata.*—Seed-bird, Revels Id., Va.

140. *Geothlypis trichas.*—Bush-bird, black-faced yellowbird, Hickman, Ky. (Pindar).

141. *Setophaga ruticilla.*—Goldfinch, Newfoundland (Harvey).

MIMIDAE.

142. *Toxostoma rufum.*—French mockingbird, Grant Co., Ind.; Hickman, Ky. (Pindar); rusty-mock, Wallops Id., Va.

143. *Toxostoma curvirostre palmeri.*—Pretty-quick, Wickenburg, Ariz. (E. A. Goldman).

TROGLODYTIDAE.

144. *Nannus hiemalis.*—Wood wren, Hickman, Ky. (Pindar).

CERTHIIDAE.

145. *Certhia familiaris americana.*—Winter creeper, Hickman, Ky. (Pindar).

SITTIDAE.

146. *Sitta carolinensis.*—Devil downhead, Ossining, N. Y. (A. K. Fisher); creeper, tree-creeper, sapsucker, Hickman, Ky. (Pindar).

PARIDAE.

147. *Baeolophus bicolor.*—Tom-tit, Ossining, N. Y. (A. K. Fisher); Hickman, Ky. (Pindar); also tip-top at latter locality.

148. *Penthestes carolinensis.*—Black-capped titmouse, crickadock, crickadoo, tom-tit, Hickman, Ky. (Pindar).

SYLVIIDAE.

149. *Regulus spp.*—Wood wren, yellow-bird, Hickman, Ky. (Pindar).

150. *Regulus satrapa.*—Kingbird, Matinicus Id., Me.,

151. *Polioptila caerulca.*—Moss-bird, Heckman, Ky. (Pindar).

TURDIDAE.

152. *Hylocichla mustelina.*—Song-thrush, Hickman, Ky. (Pindar).

153. *Planesticus migratorius propinquus.*—Summer robin, western Washington and Oregon.

154. *Ixoreus naevius.*—Winter robin, Alaska robin, western Washington and Oregon.

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MORE RECORDS FROM THE "SHORES" COLLECTION.

BY W. F. HENNINGER.

1. *Gallinago delicata.*

Sage and Bishop give this species as "very rare in summer or winter," while it is common in spring and fall. To their records of this species for the summer months must now be added another one, a ♂, taken July 9, 1875, at Suffield, Connecticut, by Dr. Shores (now No. 1356, coll. W. F. H.),

2. *Helodromas solitarius.*

To the three unusual records for this species in Connecticut, given by Sage and Bishop, Birds of Connecticut, page 61, a fourth one must now be added, a ♂, taken July 12, 1875, at Suffield, Connecticut, by Dr. Shores (now No. 1355, coll. W. F. H.). Dr. Shores' earliest record for this species is May 17, 1874, a ♂ taken, and his latest record is August 20, 1875, a ♂ taken.

3. *Oxyechus vociferus.*

Quite a number of records must be added to those given by Sage and Bishop in Birds of Connecticut, pages 65 and 66. Besides the one mentioned in March, 1917, issue of Wilson Bulletin, there are

the following: May 26, 1874, a ♂ taken; July 12, 1875, one seen; April 12, 1875, a flock seen, which was very wild, so that in spite of a long and tedious chase he could not procure any; September 1, 1877, a ♀ shot. All at Suffield, Conn.

4. *Accipiter velox.*

An additional winter record is December 1, 1874, a ♀, taken at Suffield, Conn.

5. *Empidonax flaviventris.*

A ♀ taken June 24, 1874, at Suffield, Conn. This record was inadvertently omitted in the report as given in the March, 1917, Wilson Bulletin, and it is earlier than any that Sage and Bishop give (Birds of Conn., p. 103).

6. *Euphagus carolinus.*

On May 11, 1874, Dr. Shores took one ♂ and two ♀♀ at Suffield, Conn. This is a late spring record for Connecticut, where this species is not common in spring, though common in the fall.

7. *Zonotrichia leucophrys.*

An additional record is May 23, 1875, a ♀ taken at Suffield.

8. *Melospiza georgiana.*

The very few *winter* records given by Sage and Bishop for this species show that it is a rare winter resident throughout the region. Dr. Shores took a specimen, a ♀, at Cranston, R. I., on December 3, 1874.

9. *Dendroica vigorsi.*

I have been requested to publish the Shores records for this species in full, so here they are: June 5, 1874, a ♀ taken; May 28, 1875, a ♂ taken; May 3, 1877, two ♀♀ taken (now Nos. 1530 and 1599, coll. W. F. H.); June 26, 1879, a pair taken. These are all from Suffield, Conn. June 22, 1880, two ♂♂, one ♀ taken at the Southwick Ponds, Mass.

10. *Wilsonia canadensis.*

I have also been asked to give the Shores records for this species: June 5, 1874, a ♀ taken; June 6, 1874, a ♀ taken; May 23, 1875, a ♂ taken (now No. 1491, coll. W. F. H.); May 27, 1876, a ♂ taken; May 22, 1878, a ♂ taken; May 29, 1878, a ♂ taken; August 30, 1879, a ♀ taken (now No. 1492, coll. W. F. H.); September 1, 1879, a ♀ taken; September 2, 1879, a ♀ juvenal taken (now No. 1493, coll. W. F. H.); September 6, 1879, two ♂♂ taken. All at Suffield, Conn.

A CRITICISM OF TWO RECENT LISTS OF IOWA BIRDS.[1]

BY IRA N. GABRIELSON.

An interest in Iowa ornithology leads me to call attention to several questionable records concerning Iowa birds which have appeared in two recent articles in the Wilson Bulletin. As both of these lists deal with the same general locality in North Central Iowa, they are treated together.

In the first and more pretentious paper, by Carrol Lane Fenton, two additions to the Iowa State list, as compiled by Anderson,[2] and records of other rare species are found, based on what seems to be insufficient evidence. The more important of these will be discussed in order under the separate species involved.

It is of course unsafe to assert dogmatically that an organism endowed with such remarkable locomotive powers as a bird possesses cannot occur at a given place at almost any time. There is, however, a generally accepted principal among working ornithologists that such abnormal occurrences should only be considered authentic when the actual specimens are secured. This is especially true where the observer is unfamiliar with species or when the bird is of a species difficult to distinguish from nearly related forms. This point has been discussed so many times that it is unnecessary to elaborate it further. The following records in Mr. Fenton's paper seem open to question:

1. *Colymbus holboelli.*—Holboell's Grebe.

Anderson (op. cit., p. 148) says, "Appears to be very rare in Iowa," and he does not list a single Iowa specimen. In view of this lack of authentic records for the State, sight identifications are not acceptable. The May 26 record is particularly questionable

[1] Fenton, Carrol Lane. Preliminary List of the Birds of Floyd County, Iowa (Wilson Bulletin, Vol. XXVIII, p. 130-138, September, 1916).

Tuttle, F. May. May Bird Census (Wilson Bulletin, Vol. XXVIII, p. 203-205, December, 1916).

[2] Anderson, R. M. The Birds of Iowa (Proc. Davenport Academy of Science, Vol. XI).

as this is a remarkably late date for the species outside of its breeding range.

2. *Oidemia deglandi.*—White-winged Scoter.

This bird appears in Iowa only as a straggling migrant and acceptable records of its occurrence in the State should be based on actual specimens.

3. *Branta bernicla glaucogastra.*—Brant.

Anderson (op. cit., p. 189) does not list an existing specimen for the State and only one of the "records" reported related to specimens actually handled. Kumlien and Hollister[1] were able to find only one authentic record for Wisconsin. There is one definite record for Nebraska[2] and two for Michigan.[3] These are the only records based on actual specimens that I am able to find in the State lists for the surrounding region. Upon investigation, all of the other rather numerous reports of the occurrence of the brant have been found to refer to other species. Those most commonly recorded as brant are the dark immature birds of the Snow and Blue Geese. These are often called Brant in the Middle West and the records in the paper under discussion probably are referable to one of these forms. Whatever these birds may have been, the evidence presented by Mr. Fenton seems insufficient as a basis for recording the occurrence of the Brant in Iowa.

4. *Branta nigricans.*—Black Brant.

So far as I am aware, there is not a single authentic record of the species in the Mississippi Valley. It is not mentioned (even in the hypothetical list) in any of the State lists for that region except in Hatch's "Birds of Minnesota" and he gives no dates or specimens. In any case this species and *B. c. glaucogastra* resemble each other very closely and could not be distinguished in the field except by one intimately acquainted with both forms. This record, if valid, would add a species to the Iowa list, but it cannot be accepted in the absence of specimens identified by a competent ornithologist.

5. *Grus canadensis.*—Little Brown Crane.

This species is a migrant through the Western United States, and, so far as is known, appears only as a straggler in Iowa. It closely resembles the more common Sandhill Crane in everything but size, and hence field identifications are not sufficient evidence on which to base an addition to the few records for the State.

6. *Ionornis martinicus*—Purple Gallinule.

[1] Kumlien, L., and Hollister, N., The Birds of Wisconsin. Bul. Wis Nat. Hist. Soc. 1903, p. 32.

[1] Bruner, Wolcott, and Swenk. A preliminary Review of the Birds of Nebraska, p. 30.

[3] Barrows, W. B. Michigan Bird Life, p. 120.

According to Anderson (op. cit, p. 208) this species is a very rare straggler in Iowa and he does not record a single existing specimen. Unless the bird taken by Mr. Waller is still extant to confirm this record it should be excluded from the list. The other bird recorded on sight identification was probably a Florida Gallinule.

7. *Himantopus mexicanus.*—Black-necked Stilt.

This species is a rare straggler into the Northern States and should not be included in Iowa lists on the basis of indefinite statements. Anderson records two specimens for the State.

8. *Tryngites subruficollis.*—Buff-breasted Sandpiper.

A rare migrant in Iowa, of which only a few specimens have been taken. It would be well to have the supposed specimen of the Buff-breasted Sandpiper examined by some working ornithologist before accepting it as an additional record for the State.

9. *Falco mexicanus.*—Prairie Falcon.

Prof. B. H. Bailey, of Coe College, made a special trip to Floyd County to examine the supposed specimen of the Prairie Falcon, and writes me that he found it to be an immature Broad-winged Hawk (*Buteo platypterus*).

10. *Cryptoglaux funerca richardsoni.*—Richardson's Owl.

This species was placed in the hypothetical list by Anderson, as no actual specimens had been taken in the State. On the face of the statements in the present paper this owl would be added to the State list. Dr. Bailey examined the specimen and found it to be a Screech Owl (*Otus asio*) in the gray phase.

The second paper, by F. May Tuttle, contains identifications that it is practically impossible to make in the field.

For example, the Northern Hairy Woodpecker is positively identified on field observation. The status in Northern Iowa of the two subspecies of this woodpecker is still unsettled. In any event the field identification of subspecies, based on *average* differences in size and coloration, should not be attempted.

This last remark applies equally as well to the records of the Yellow-bellied, Traill's, and Alder Flycatchers. The status of the last two in Iowa is still in dispute, but all of my Iowa specimens have been identified by H. C. Oberholser as *E. t. alnorum*. However this question of subspecific range may be settled, the fact remains that field identifications of

these two small flycatchers are not reliable. Personally I know of no working ornithologist who attempts to distinguish between Traill's and Alder Flycatchers in the field.

Similar remarks may be said to apply to the attempt of the average observer to distinguish between Philadelphia and Warbling Vireos in life under normal field conditions.

Another record which needs confirmation is that of the Bohemian Waxwings on so late a date as May 22. The birds were in all probability Cedar Waxwings.

FIELD NOTES

HISTORY OF A KILLDEER'S NEST.

The following notes from my notebook are about a killdeer's nest, which I found in our thirty-acre corn field about one mile northeast of the town of Wall Lake, Iowa:

June 8, 1911.—I found a killdeer's nest while cultivating corn. The nest was merely a slight depression hollowed out in the ground beside an old corn husk and a piece of stalk and contained two eggs. The mother bird tried to draw me away by uttering all sorts of cries, squatting, fluttering her wings and occasionally spreading her tail very wide in a fan shape. A part of the time two male killdeers were around, but they did not come close. I moved the eggs about twelve feet while I plowed the corn row they were in, then I moved them back again.

The nearest running water to the nest is about one-half mile away, a small creek, while the nearest marshy places, such as killdeers usually feed in, are over a mile away. The nearest bluegrass pasture is about one-fourth mile away.

June 9th.—Found the killdeer absent from her nest at 7:40 a. m., and three eggs in it. The killdeer soon returned and sat on the nest most of the forenoon.

June 11th.—The killdeer's nest contained four eggs at 6:42 a. m. At 8:30 p. m. the nest contained only three eggs. The wind blew very hard from the northwest all day, but I do not think the egg blew away.

June 14th.—I found the missing egg about five rods southwest of the nest. As the wind blew from the northwest on the 11th it could not have blown there. The shell was pierced and empty, with yolk stains around the opening. It appears that some small animal carried off the egg and sucked it, although I could not determine what, or why it did not return for the other eggs.

June 18th.—My sister and I went out to the nest after dinner. The killdeer left the nest without making an outcry while we were yet about five rods away and did not return until we had gone quite a distance from the nest, when it flew around us with outcries and led us further from the nest. It then flew away, but did not return to the nest while we were in sight.

June 24th.—I saw six old killdeers all in a bunch in the hayfield this evening, which were calling and acting as though there were young killdeer there. (The hayfield is located north of the cornfield and about one-fourth mile away.)

June 25th.—I went out to the killdeer's nest this morning. The three eggs are still there and have not hatched. The killdeer has

collected quite a quantity of small weathered pieces of cornstalks and scattered them in and around the nest.

June 28th.—The killdeer's eggs have not hatched yet.

July 2d.—I went out to the killdeer's nest this morning about 8 o'clock. The three eggs were just pipped; that is, the shell cracked out, not broken through. At 3 p. m. the eggs were still in the same condition. Both old birds were there and somewhat solicitous, although they did not come very near. I went out to the nest again at 6:30 p. m. I could hear one chick peep inside the shell several times, otherwise conditions were unchanged.

July 3d.—The killdeer's eggs were pipped through the shell and membrane this morning. At noon they were not yet hatched and were in the same condition at night. The old killdeers were in the vicinity of the nest morning and evening, but not at noon.

July 4th.—The eggs were not hatched early this morning. I could hear one chick peeping very loudly.

July 5th.—The killdeer's eggs were not hatched at 6 a. m. and I could hear the chicks peeping. As the weather had been very dry and very hot the past week I concluded that the eggs needed moisture and poured the stale water from my water jug over them. The female killdeer was a little alarmed at this. At 1 p. m. I again visited the nest and found the eggs hatched. The young birds were squatted flat on the ground in the nest, two of the three not yet dry, and they were puffing from the heat. The temperature was 102° F in the *shade*, and they were exposed to the full glare of the sun upon the dark earth. The old birds were both there, but made only a slight outcry. About 2:30 p. m. a shower of rain fell, which would have supplied the moisture had I not done so. Some friends and I again went out to the nest at 8 p. m., but although the old birds circled about, the young killdeers were gone.

July 9th.—I saw the two old killdeers and two chicks in the bluegrass pasture about one-fourth mile from where they were hatched. I followed one chick slowly for about five rods, when I was able to capture it. It called repeatedly just before I caught it and was apparently tired out. After replacing it on the ground I could not persuade it to move, so I left it.

My father saw the chicks in the same locality about two days later, so I hope they survived.

According to these notes the incubation period would be either twenty-one or twenty-two days, depending on when the incubation commenced, had the eggs hatched the day they were pipped. As conditions were, the period of incubation was either twenty-four or twenty-five days, which shows how hardy the killdeer chicks were.

I did not put it down in my notes, but I also moved the eggs the second time I cultivated the corn.

J. A. SPURRELL.

Wall Lake, Iowa.

NOTES FROM LAKE COUNTY, OHIO.

Iceland Gull—On December 3, 1916, a White-winged Gull was flying about the piers and breakwaters at Fairport Harbor, and was under my observation for some time. The bird was an immature and very dark in coloration, except for the end third (primaries) of the wings, which were pure white. The general color was as dark as the darkest immature Herring Gull one ever sees, and this brought out the white tips of the wings in striking contrast. Even when the bird flew far out over the lake, where the glass was necessary to distinguish it at all, these pure white wing tips were very evident. I called it Iceland rather than Glaucous because, from among the immature Herring Gulls about for comparison, it did not show appreciably larger. The bird winged back and forth and settled upon the water at times, but made no vocal outcry whatever.

Purple Sandpiper—The bird mentioned in the December issue of the Bulletin stayed about the stone breakwater for some time and was last seen on November 12. On this date it showed a tameness worthy of record. A friend and I walked up to within fifteen feet of the bird and then sat down to observe it at our ease. It watched us also for a while and then deliberately tucked its bill under its wing and took a snooze. Nor did it withdraw its bill when we arose and left. Later in the day I went out on the stones again alone and was keeping an eye in the air for ducks, when I became aware that something was trying not to get stepped on. I looked down and there was the Sandpiper again at my feet calmly walking away. The bird was injured in no way, for it took long flights across to the other breakwater and was a splendid fat specimen. Before I could get down again with a camera a severe winter storm had occurred and I saw him no more.

E. A. DOOLITTLE.

Painesville, Ohio.

THE MAY MIGRATIONS, 1917, AT OBERLIN, OHIO.

If one needed concerte evidence that the weather does have a profound influence upon the movements of the birds during their periods of migration, he has it.

March was not unusual, and while the records show a somewhat erratic migratory movement for that month—in the unusually early

arrival of some few species and an unusually late appearance for others—there was no reason for predicting what has happened in May. April was also nearly normal up to the last week. But beginning with the last week of April and continuing until almost the closing days of May there was almost continual cold weather, with frosts or near-frosts, and no period of warm weather of sufficient duration or of wide enough extent to permit the smaller birds to move in safety.

How widespread this condition was over the interior of the country remains to be learned. It extended at least into central Iowa.

The most distressing thing about the period of cold was the great destruction of Purple Martins and swallows during the first two weeks of May, and the death by starvation of large numbers of the other small insectivorous birds during the last two weeks. Practically all of the first wave of martins died of starvation in and about their nesting houses, here in Oberlin, and many of the second wave likewise starved. It may be that some few individuals retreated southward and returned when the weather moderated, but that was not determined. There were three distinct waves of martins: the first during the first week of April, the second about the first of May, and the last about May 20. Something of the same thing happened with the swallows.

There was no migration, in the proper sense, of warblers and other small birds until May 18, when for three days they came in numbers, then there was a return of cold and wet weather, which held them until the last day of May. How much longer some will stay remains to be learned.

LYNDS JONES.

TUFTED TITMOUSE AT IOWA CITY.

(*Baeolophus bicolor.*)

It is interesting to observe the apparent increase in numbers of this species in and near Iowa City and the fact seems worthy of mention at this time.

Anderson, in his "Birds of Iowa" (1907), indicates the Tufted Titmouse as "a rather rare resident in southern Iowa, seldom reaching the northern part of the state, although it has been occasionally taken in the extreme southern counties of Minnesota." The increase in the number of individuals locally, not only in town but in the surrounding country as well, has been quite marked in recent years and one can not go on a field without encountering at least three or four and hearing the loud, clear whistle of perhaps several others. They are quite tame and unsuspicious and I have approached to within a few feet of them on many occasions. The

species seems to be a permanent resident in this (Johnson) county. A number of persons living near the edge of town have reported its presence at feeding stations during the past winter.

DAYTON STONER.

State University of Iowa, Iowa City, Iowa.

CITY NESTING OF NIGHTHAWK.

In the September Bulletin Mr. N. B. Townsend calls attention to a matter that may be worth discussion.

He theorizes that the adoption of flat roofs as a nesting ground by the nighthawk is a change that is favorable to the bird, and this attitude interests me considerably, because I had formed the contrary opinion from a consideration of the comparative abundance of nighthawks during the last thirty years.

At the beginning of that period the nighthawk was a common summer resident in this district, but since then it has decreased steadily as the bird took up its abode in the city; and it has always seemed to me that immigration was the only thing that kept up the city population, and now that the bird is very rare in the country, with the probability of no further movement citywards, the city residents are becoming much less numerous.

It may easily be, as Mr. Townsend says, that the nighthawk nesting on a roof is safe from all predatory creatures, but what of the young after the first flight? Repeatedly I have had young nighthawks brought to me, both living and dead, which had been picked up on the ground in the morning, doubtless after making their first flight during the previous night and coming down to spend the day on the ground in accordance with what might easily be supposed to be the hereditary custom. But what chance of survival is there for a young nighthawk on a city street or vacant lot? And it is because of the overwhelming dangers of the ground in the city that these birds have been so seriously depleted in numbers.

Yours truly,

W. E. SAUNDERS.

London, Ontario.

SPARROW HAWK AT THE UNIVERSITY OF ILLINOIS, Urbana, Ill.

On January 27, 1917, while taking an examination in the Stock Pavilion I was attracted by a shower of small feathers which were falling into the arena. I traced the stream of feathers to its source and there, on a steel girder, near the roof, sat a sparrow hawk steadily plucking an English sparrow.

The Stock Pavilion is a large building, with a tan-bark arena in

the center and tiers of bleacher-like seats surrounding on all sides. It is used for the various stock-judging courses and there are large classes held there most of the day. English sparrows can be found at all times in the Pavilion. Several places in the arena were scattered with feathers, testifying to the good work of the hawk.

One of the caretakers at the Pavilion stated that the hawk had been staying there for about three weeks.

WALTER A. GOELITZ.

Ravinia, Ill.

RED-BELLIED WOODPECKER AT ATLANTIC, IOWA.

A few days ago a male Red-bellied Woodpecker, *Centurus carolinus*, was observed for the first time in this locality. While it may be possible, of course, that an occasional individual of the species visits western Iowa, careful observation of both summer and winter birds has never revealed one before, and the occurrence may be of interest to other readers. Since first observed, he has appeared every day at our suet bags, affording us ample opportunity to confirm identification, as well as the pleasure of studying his beautiful plumage.

T. H. WHITNEY.

Atlantic, Iowa, April 20th, 1917.

PILEATED WOODPECKER.

A number of articles have appeared within the last year or so regarding this rare bird, all of which relate to counties near us, Ashtabula in particular, but I never have seen a note giving report of an instance of its having been seen in Geauga. I have therefore thought it proper to speak a word for our little county.

My own satisfactory views of the birds have been only two, but both of these unmistakable. Both occurred within the limits of Chardon Village, and at the same edge of the same piece of woodland. The first, on March 15th, 1905, was of a mature male, while the second I took to be a young bird, form, size and action being true to the species, but the areas that would be black in the mature bird, though quite dark, were not black. Two others were with me for this observation. It was made May 5th, 1907.

Nearly every year some member of our Bird Club reports seeing one at some point near, and we are coming to consider them not very uncommon.

F. E. Ford and Arthur Fowler, of this place, followed one to a swampy piece of timber about two and a half miles from town, in the township of Claridon, last year, where they saw indications that a pair were getting ready for housekeeping.

Mr. B. P. Grunauer, of Cleveland, who has recently purchased a farm in the west part of Chester, this county, informs me that he and a friend one day last spring found one, having traced him by his drumming, in a large piece of timber at the back of the farm.

A student from Hiram College informs me that a pair have nested in a large dead tree near that place for several years. Hiram township is in Portage county, and joins this county on the south.

The accompanying article, relating to the same bird in another quarter of the county and covering, as it does, a longer period, is evidence, not only that they are likely to be found in all parts of the county, but suggests that this occupation of our territory has continued for very many years. Several other instances of their having been seen in this vicinity might be given in detail, but these are sufficient to establish the fact that Geauga county is and has been, perhaps for ages, the home of this remarkable bird.

ORANGE COOK.

February 22, 1917.

In the southwest part of Geauga county there is a large unbroken tract of timber of over one hundred acres in extent. This forest was a part of four different farms, one of which was my father's, and later became my own. It was on this farm that I spent sixty years of my life, and I was pretty familiar with the wild life that found a home in the recesses of this forest. And I may add that much wild life yet exists there that has entirely disappeared from most other sections.

From my earliest recollections the Pileated Woodpecker has made these woods his home, and he is yet to be found there every year. We first called him the Woodcock. Later we were taught that his proper name was Logcock, and as we began the study of natural history we learned to call him the Pileated Woodpecker.

How we (my brother and myself) liked to follow the big fellow about, and watch him at work, hammering vigorously and noisily upon the limb or trunk of some decaying tree. The amount of excavating that they could do in a short time was truly astonishing. The powerful strokes of that chisel-like bill could be heard a long distance. Many of the pieces of wood they would throw out of the place they were excavating would measure two or more inches in length.

Although the Pileated Woodpecker is a rare bird, and somewhat shy, I have never found it difficult to approach him while he was busy at work. He always seemed to be so completely absorbed in the business before him, that he gave but little heed to what was going on around him.

I think the Pileated Woodpecker is the most solitary of all our native birds. Although I have seen him frequently, all my life, I never saw two at the same time, though my brother once did,—but that was undoubtedly at mating time.

He certainly is a captain at hiding his nest, for though we were certain he nested somewhere in that large tract of woods, we were never able to find his nest. I have more than once found holes in trees that looked as though they might be his nesting place, but always in a place so inaccessible that I was never able to verify my suspicions.

The Pileated Woodpecker is said to be a vanishing bird, and nearing final extinction. This belief I regard as only partly true. While they are much less numerous in some sections of the country than they formerly were, they are to be found as numerous in many places that are to their liking, as they were in pioneer days. The greatest enemy to this magnificent bird is the modern hunter with the modern gun. We have laws and laws for the protection of the wild things about us that are so vitally necessary to our own existence; but against the ruthless and irresponsible hunter with a modern weapon in his hands there is little protection, little hope for those things he desires to kill.

A. R. PHILLIPS.

Publications Reviewed

The editor feels constrained to express his regret that he has not been able to present reviews of literature which has been accumulating upon his desk for a full half year without notice in these pages. He will not make the annual pilgrimage to the Pacific Coast this summer, because of service which the war has called for, and therefore time for many things will be available during the summer.

"A YEAR WITH THE BIRD." By Alice E. Ball. Illustrated by Robert Bruce Horsfall. From the press of Gibbs & Van Vleck, Inc., New York. Published by the author, 1961 Ford Drive, Cleveland, Ohio.

Each of the 56 species treated in this book has a full-page plate in colors by Horsfall accompanying the description, which is in verse. The underlying thought of the author is that young children will be more certainly attracted by rhyme than prose, and will be likely to retain their early impressions thus gained. The mechanical work is exceptionally good, and the type large and clear. Of especial value are the backgrounds in the illustrations,

which give the bird in its proper natural setting. Without these backgrounds few persons would be able to be sure of the Phœbe and Wood Pewee. The bill of the Field Sparrow should be redder and the illustration of the Sandpipers does not give an accurate picture of the differences between these two species. The book should make a strong appeal to the child who is forming early impressions of the birds. L. J.

THE BIRD STUDY BOOK, by T. Gilbert Pearson, Secretary, National Association of Audubon Societies. Doubleday, Page & Co. $1.25, net.

"This book has been written for the consideration of that ever-increasing class of Americans who are interested in acquiring a greater familiarity with the habits and activities of wild birds." With an audience of beginners before him the author begins with the nest as the most available place of attack, devoting three chapters to this. Chapter 4 is given to a discussion of "Migration," and 5 to "The Birds in Winter." Then follow six chapters which might be grouped around the word "Economic," which includes man's influence upon the birds and his efforts at protection of them for whatever reasons. The last chapter is devoted to a discussion of "Teaching Bird Study."

There is a colored frontispiece of the Wood Thrush. Sixteen full page half-tone cuts, and 26 line cuts in the text, are well selected and creditably done. Paper, binding and type are of high grade, and the volume is handy in size and pleasing in style. It is a book well worth the attention of everybody, whether he has any particular interest in the birds or not, and should prove of exceptional value to the beginner. L. J.

MINUTES

of the

Eighteenth Annual Meeting of the Nebraska Ornithologists' Union

The eighteenth annual meeting of the Nebraska Ornithologists' Union was held at Lincoln, Nebraska, Friday and Saturday, May 4 and 5, 1917. The sessions were held at the Temple Building of the University of Nebraska, and there were two programs given on May 4, one in the afternoon from 4:00 to 5:45 and an evening program from 8:00 to 10:30. The annual banquet was held at the Lincoln Hotel at 6:15 p. m., with twenty-six members and their guests present. After the banquet the business session was held, with President R. H. Wolcott in the chair. The officers reported briefly, and following the report of the Secretary-Treasurer an Auditing Committee consisting of Mr. C. E. Mickel and Mrs. G. A. Loveland was appointed. A Nominating Committee consisting of Prof. L. Bruner, Mrs. L. R. Button and Dr. D. C. Hilton was also appointed. While these committees were deliberating the society proceeded with the election of new members.

The names of eight new members were proposed by various members of the society and all were elected as follows: Mr. L. H. Watson and Mesdames Katherine Follmer, May Hathaway, Emma Hathaway, A. E. McChrystal and Olive Wallace of Lincoln, Miss Mary Ellsworth of Omaha, and Miss Floy Canaday of Murdock. The Auditing Committee reported finding the accounts of the society correct, and upon motion the report of the Treasurer was accepted. The Nominating Committee then reported and the following officers were elected for 1917:

President—Mr. C. E. Mickel, Lincoln.
Vice-President—Mrs. W. F. Baxter, Omaha.
Secretary-Treasurer—Prof. M. H. Swenk, Lincoln.

The following thirteen members were present at the business meeting of the society: Mesdames L. R. Button, G. A. Loveland, C. W. McCaskill, E. Ruth Pyrtle, R. S. Rice and A. E. Sheldon, and Messrs. L. Bruner, R. W. Dawson, D. C. Hilton, H. B. Lowry, C. E. Mickel, M. H. Swenk and R. H. Wolcott.

The combined program of the afternoon and evening follows:

The Birds of the Philippine Islands (illustrated with selections from a series of over 800 skins collected during 1914-1916), Mr. J. T. Zimmer, Port Moresby, Papua.

The Birds of Scottsbluff County, Nebraska, Mr. C. E. Mickel, Lincoln.

The Pinyon Jay in Nebraska, Rev. J. M. Bates, Red Cloud.

New Records of Bird Songs, Mrs. L. R. Button, Fremont.

President's Address, The Migration of Birds, Dr. R. H. Wolcott, Lincoln.

Demonstration of Bird Portrait Slides, Dr. S. R. Towne, Omaha.

The fifteenth annual field day of the Union was held in the environs of Lincoln on Saturday, May 5. There were three field parties, all starting at 7:00 a. m., one taking the train for Jamaica and working along Salt Creek to Hanlon, under the leadership of Prof. L. Bruner and Mr. J. T. Zimmer, one circling Capital Beach under the leadership of Prof. M. H. Swenk, and the third, led by Mr. C. E. Mickel, studying the birds in Wyuka Cemetery. The first two parties worked until the middle of the afternoon and the third party until noon. The total list of the day included ninety-six birds, as follows:

Bluebird, Robin, Olive-backed Thrush, Gray-cheeked Thrush, Wood Thrush, Ruby-crowned Kinglet, Golden-crowned Kinglet, Long-tailed Chickadee, Red-breasted Nuthatch, White-breasted Nuthatch, Long-billed Marsh Wren, Western House Wren, Brown Thrasher, Catbird, Grinnell Water-Thrush, Myrtle Warbler, Yellow Warbler, Tennessee Warbler, Orange-crowned Warbler, Nashville Warbler, Black and White Warbler, Warbling Vireo, Migrant Shrike, Cedar Waxwing, Rough-winged Swallow, Bank Swallow, Tree Swallow, Barn Swallow, Purple Martin, Rose-breasted Grosbeak, Cardinal, Towhee, Arctic Towhee, Swamp Sparrow, Lincoln Sparrow, Song Sparrow, Slate-colored Junco, Western Field Sparrow, Clay-colored Sparrow, Chipping Sparrow, White-throated Sparrow, White-crowned Sparrow, Gambel Sparrow, Harris Sparrow, Lark Sparrow, Leconte Sparrow, Western Grasshopper Sparrow, Savanna Sparrow, Pine Siskin, Goldfinch, Bronzed Grackle, Rusty Blackbird, Baltimore Oriole, Eastern Meadowlark, Western Meadowlark, Red-winged Blackbird, Yellow-headed Blackbird, Cowbird, Crow, Blue Jay, Prairie Horned Lark, Phœbe Kingbird, Red-shafted Flicker, Northern Flicker, Downy Woodpecker, Hairy Woodpecker, Belted Kingfisher, Sparrow Hawk, Broad-winged Hawk, Swainson Hawk, Marsh Hawk, Mourning Dove, Piping Plover, Semipalmated Plover, Killdeer, Spotted Sandpiper, Western Willet, Solitary Sandpiper, Yellow-legs, Semipalmated Sandpiper, Red-backed Sandpiper,

Least Sandpiper, Baird Sandpiper, Wilson Phalarope, Coot, Bittern, Bluebill, Wood Duck, Shoveller, Blue-winged Teal, Widgeon, Double-crested Cormorant, Franklin Gull, Ring-billed Gull and Eared Grebe.

REPORT OF TREASURER, 1916-1917.

Receipts.

Cash on hand, May 5, 1916	$188.13
Annual dues collected	76.00
Sale of Checklists	4.71
	$268.84

Expenditures.

Wilson Bulletin	$ 60.00
Postage	2.85
Balance on hand, May 4, 1917	205.99
	$268.84

MYRON H. SWENK,
Secretary-Treasurer.

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THE BIRDS OF DENVER.

An Annotated List.

BY W. H. BERGTOLD.

This list is published, not only to make available to ornithologists in general a part of the writer's accumulation of data relating to Denver's birds, but also to render aid, in a small way, to bird-loving visitors to this city, especially to those whose visit may be of brief duration, and who wish to make, from a bird lover's point of view, the most of such a "stop-off."

It is hoped that the list will point out what birds one may reasonably expect to see in Denver at any given time, and to define, in a general way, the status of any one of such birds. Parenthetically, the writer may be permitted to digress a bit, and suggest to the visitor who may have some time left over after a general survey of Denver's birds, that it can be profitably spent in studying a few mountain species, which can be found in Lookout Mountain Park. This region is easily reached in a little over an hour's trolly ride from Denver, which ride is a trip along the valley of Clear Creek, and which will in itself disclose birds not common, or seldom, seen in Denver.

The situation of, and the conditions about, Denver, make it a peculiarly interesting place for the study of western bird life; its geographical location makes it possible to see within its boundaries species and subspecies usually restricted to

Eastern, Northern, Western or Southern Faunae, the City of Denver being at the overlapping edges of these four characteristic bird regions.

When the writer first came to Denver (1881) its corporate limits were much smaller than at present, it had no large parks, and its then rather infrequent trees were nearly all native "cottonwoods," which were watered by small irrigating ditches running as gutters on either side of practically every street. The complexion of its bird life was then very different from what it is now; there were no English sparrows, fewer house finches, but more swallows (of several species) and many ravens and turkey buzzards. The immediately surrounding country had much of its native bird population unchanged; the small ponds and sloughs were all frequented by many curlews, avocets, plovers, and other forms now relatively scarce, even in districts of the State still uninhabited and uncultivated.

In the intervening thirty-six years vast changes have been wrought by man, not only in the upbuilding of a modern city, but even in the very topography of the area now under consideration; what was then virgin prairie dotted with an occasional pond, and slightly marshy area, and with perhaps a cottonwood tree here and there, is now well wooded and watered park and residential districts.

If in the summer one view Denver from the summit of Genesee Mountain (air line distance about 18 miles), it seems mainly to be, not a multitude of houses, and other buildings, but a dense green forest, stretching out towards, and gradually melting into, the prairie on the distant eastern horizon. This appearance is due to the great abundance of tall shade trees growing on each side of all the residence streets, and the deception is enhanced by the many trees in the extensive park system which adds so much to the beauty of the city. This park system embraces some thirty-five parks, varying in size from one to nearly five hundred acres, some of which are more or less inter-connected by wide and partly wooded boulevards; forty years ago the ground cov-

ered by the largest of these parks, the so-called "City Park," was unaltered prairie, with no trees, and with one uncertain watercourse. Now after years of labor and care it is well covered by trees of many species, has three moderate sized lakes, and gives shelter to many bird species and bird individuals, which years ago were unknown or scarce in the same area.

Three of the smaller parks also lend themselves particularly well to fostering bird life, to-wit, Berkeley, Cheesman, and Washington Parks.

Because of the conditions briefly, and incompletely outlined above, the City of Denver furnishes a striking example of the changes in the bird population in such a locality which can be brought about by the presence and intervention of man; it is highly gratifying to see and to realize, that in Denver the harm to birds following in the track of civilization, has not been of its usual severity. Here man has not dealt altogether harshly with birdkind.

The writer's duties, for many years, have taken him daily through one or more of the parks of Denver, and also frequently to the outskirts of the city; he is convinced that each year shows an increasing bird population, both in species and individuals, throughout most of the city, but especially noticeable in Washington and Cheesman Parks. However, an exception to this must be noted; the writer is certain (based on careful personal observations) that the number of bird species and individuals has decreased in City Park during the past six years, a decrease most noticeable in the number of Bullock's orioles. This undesirable diminution is due, it seems to the writer, to the continued extensive spread of the English sparrow, and to the recent introduction of squirrels. While the latter have been detected many times in the act of eating the eggs and young of our native birds, their injurious effects on our bird population are probably far less than those of the English sparrow, which swarms in this particular park. This sparrow finds an easy living in the pheasant and other zoölogical enclosures, and for a few years past,

after using ordinary sites for its nests, has taken to occupying abandoned oriole nests; hence the conditions in City Park promote the English sparrow's usual prolificity, and cause a corresponding repression of the natural increase of the native birds, because this sparrow destroys many nests, eggs, and young of our small birds. It is a pity that some systematic effort cannot be made to restrict the multiplication of the English sparrow in our parks; a routine destruction of its nests would be in itself a large first step in the right direction.

It has been a real privilege to watch, in the past years the gradual increase of birds in Denver; where thirty-five years ago there were robin, warblers, vireos, and house finches by twos and threes there are now dozens; where years ago nuthatches, chickadees, and juncoes were to be found sparingly along the Platte River as it passed through Denver, they are now to be seen every winter in all the parks, and even at times in the well built up sections of the city. Furthermore there is no doubt but that our beautiful native bluebird would be as common as robins in the city were it not for the English sparrow. These species furnish a few examples of the wonderful increase of bird life in Denver, due mainly to man's alterations in the physical and floral conditions of the region.

The following named birds have been recorded in the past as having been observed (or taken) "in Denver" or "near Denver":

Eared Grebe
Franklin's Gull
Arctic Tern
Double-crested Cormorant
Mottled Duck
Wood Duck
Old Wife
Surf Scoter
Glossy Ibis
White-faced Glossy Ibis
Wood Ibis
Little Brown Crane
Black Rail
Stilt Sandpiper
Golden Plover
Snowy Owl
Bobolink
Rusty Blackbird
Purple Finch
Eastern Goldfinch
White-throated Sparrow
Oregon Junco
Indigo Bunting
Palm Warbler
Blue-grey Gnatcatcher

While many of the above named birds unquestionably may have been seen or taken within the present *limits* of Denver, nevertheless it has been so often impossible to determine, from the published record, exactly where the species was seen or taken, that it has been deemed wisest to restrict the following annotated list to the species seen by the present writer within such *limits,* which may be outlined approximately as follows: on the north by West 48th and West 52d Avenues, on the west by Sheridan Boulevard, on the south by Yale Avenue and on the east by Yosemite Street; these limits enclose an area of a little more than fifty-eight square miles.

The list comprises all the species seen by the writer in Denver during the past twenty-three years, and he alone (exceptions noted) is responsible for the correctness of such records.[1]

No attempt has been made to include such other birds as are known to occur in the immediately contiguous areas of Riverside, and Fairmont cemeteries, nor in the adjoining towns of Aurora, Englewood, and Edgewater.

The writer is confident that a much larger number, than this list shows, of bird species visit Denver from year to year; in order to make such a list complete, however, one would have to make regular daily observations, a systematic study obviously impossible to one whose vocation commands most of his time for other purposes.

A visitor to Denver should not be disappointed if many of the species herein listed are not seen during a brief sojourn in the city, as many of the birds of the list are of irregular occurrence; nor should a visitor feel that it is useless to look for birds in the district under consideration during the season when nature is asleep. No month in the year in Denver is without its birds, and a street car will take one quickly to one of the larger parks, where in any season some

[1] For the sake of relative completeness twenty-nine other species recorded by Cooke in his list of Colorado Birds, as having been seen or taken in Denver, are herein included, and so indicated.

phase of our native bird life is certain to be seen. Furthermore, the writer urges the bird lover who is not very familiar with western birds, to visit the Colorado Museum of Natural History (in City Park) where are to be found comprehensive and graphic illustrations of a large number of Colorado birds, in the mounted specimens and groups displayed in the Museum rooms.

In trying to give some idea as to the relative abundance of the different species, the writer has done so in comparative terms only. In such matters the chances of experience and the personal equation cannot fail to enter, hence the terms used to qualify a bird's abundance are largely relative, and must be taken as such, and as such only.

1. *Stercorarius parasiticus*—Parasitic Jaeger. Cooke; by Smith, 1889.

2. *Larus argentatus*—Herring Gull. Cooke; by Smith, 1883.

3. *Larus atricilla*—Laughing Gull. Cooke; by Smith, 1889.

4. *Larus philadelphia*—Bonaparte's Gull. Cooke.

5. *Xema sabini*—Sabine's Gull. Cooke.

6. *Phalacrocorax vigua mexicanus*—Mexican Cormorant. Cooke; by Felger.

7. *Pelecanus erythrorhynchos*—White Pelican. A flock of more than forty seen flying over Montclair June 14, 1913.

8. *Anas platyrhynchos*—Mallard. Common during migration in all the park lakes, and in wet places of the outskirts; also along the Platte. Probably breeds with the domesticated species in City Park. Arrives in the late winter months, as soon as there is open water, i.e. February.

9. *Chaulelasmus streperus*—Gadwall. Not infrequent in Washington and City Parks during migration. Arrives a little after the mallard.

10. *Mareca americana*—Baldpate. Noted in City Park, Washington Park, and University Park, as a migrant. Arrives about the middle of March, and reappears the last week in October.

11. *Nettion carolinense*—Green-wing Teal. Seen in Washington Park, October 17, 1896.

12. *Querquedula discors*—Blue-wing Teal. Noted in City Park, February 4, 1916, and April 24, 1917.

13. *Spatula clypeata*—Shoveller. Fairly common in the various park lakes and flood-water areas in the outskirts during migration; seen from March 18 to June 16, and as early as September 26. Becomes very tame in City Park lakes, if undisturbed.

14. *Dafila acuta*—Pintail Duck. Noted in City Park, March 31, 1913.

15. *Marila americana*—Redhead. Frequent in City Park during migration; has been seen there in two different years, all summer, and would doubtless breed if undisturbed. Becomes very tame.

16. *Marila valisineria*—Canvas-back Duck. A flock of fourteen seen in City Park, March 17, 1917.

17. *Marila affinis*—Lesser Scaup Duck or Bluebill. Seen in City Park, March 17 and April 24, and in Washington Park, April 25, 1917.

18. *Clangula islandica*—Barrow's Golden-eye. One noted in City Park, November 15, 1898.

19. *Oidemia deglandi*—White-winged Scoter. Cooke; by Smith, 1890.

20. *Branta canadensis canadensis*—Canada Goose. One shot in Washington Park, October, 1895, and a large flock of geese, probably of this species, seen flying over City Park, February 21, 1914.

21. *Ixobrychus exilis*—Least Bittern. Cooke; by Borchert, 1898.

22. *Ardea herodias herodias*—Great Blue Heron. One seen June 16, 1914, in a flood-water pond in Montclair.

23. *Egretta candidissima candidissima*—Snowy Heron. Cooke; by Felger.

24. *Nycticorax nycticorax nævius*—Black-crown Night Heron. Has been seen at various dates from March to July, in City Park, Montclair, and flying over Cheesman Park.

25. *Porzana carolina*—Sora Rail. One found wounded in City Park, September 14, 1911, by Dr. Leonard Freeman.

26. *Fulica americana*—Coot. Not infrequent in City Park, and observed once flying over Cheesman Park.

27. *Steganopus tricolor*—Wilson's Phalarope. Seen in Montclair, June 16, 1914.

28. *Philohela minor*—Woodcock. One seen in University Park, June 8, 1895.

29. *Gallinago delicata*—Jack Snipe, Wilson's Snipe. Detected in University Park, June 4, 1895, and June 5, 1896.

30. *Macrorhamphus griseus scolopaceus*—Long-billed Dowitcher. Cooke; by Henshaw, 1873.

31. *Calidris leucophæa*—Sanderling. Cooke; by Smith, 1888.

32. *Totanus melanoleucus*—Greater Yellow-legs. Two seen in Washington Park, April 19, 1917.

33. *Helodromas solitarius cinnamomeus*—Western Solitary Sandpiper. Seen in University Park, September 2, 1896, and in City Park, August 22 and 23, 1913.

34. *Bartramia longicauda*—Upland Plover. Two noted in City Park, April 18, 1912.

35. *Actitis macularia*—Spotted Sandpiper. Occasionally seen in City Park and Washington Park, during June and September.

36. *Numenius americanus*—Long-billed Curlew. Seen once in Washington Park, July 3, 1896.

37. *Squatarola squatarola*—Black-bellied Plover. Cooke.

38. *Oxyechus vociferus*—Killdeer. Not uncommon in the outskirts, and frequently seen in City and Washington Parks. Arrives in March and leaves in December; breeds in the outskirts. Seen also in Cheesman Park, December 5, 1913, and April 24, 1917.

39. *Podasocys montanus*—Mountain Plover. Taken once, in University Park, July 3, 1896.

40. *Arenaria interpres interpres*—Turnstone. Cooke; by Smith, 1890.

41. *Phasianus torquatus*—Ring-neck Pheasant. Introduced. Becoming common; resident throughout the year and breeds in all the large parks.

42. *Zenaidura macroura marginella*—Western Mourning Dove. Frequent in all the larger parks, and in the outskirts. Arrives in March and leaves in October. Breeds occasionally in Cheesman and City Parks.

43. *Cathartes aura septentrionalis*—Turkey Buzzard. Uncommon and irregular visitor. Noted soaring over City Park and University Park.

44. *Circus hudsonius*—Marsh Hawk. Frequent but irregular visitor to City Park, University Park, Country Club, and Montclair, from July to December.

45. *Accipiter velox*—Sharp-shinned Hawk. Frequently seen during April, in migration in Cheesman Park; and in the fall, in the center of the city, i.e. on the court house grounds, December 8, 1913.

46. *Accipiter cooperi*—Cooper's Hawk. One seen in University Park, May 25, 1896.

47. *Buteo borealis calurus*—Western Red-tail Hawk. Casual only within city limits; City Park, May 9, 1912, and Montclair, October 28, 1914.

48. *Buteo swainsoni*—Swainson's Hawk. Observed once at University Park, September 26, 1896, and Montclair, April 24, 1917.

49. *Archibuteo lagopus sancti-johannis*—American Rough-leg Hawk. An irregular winter visitor; in City Park and Montclair, December to February.

50. *Archibuteo ferrugineus*—Ferruginous Rough-leg. Detected in Montclair, April 17, 1916.

51. *Falco mexicanus*—Prairie Falcon. A fall visitor to University Park, City Park, and Cheesman Park; September to December.

52. *Falco columbarius columbarius*—Pigeon Hawk. A rare vis-

itor during migration; University Park, October 17, 1896, and Cheesman Park, January 24, 1904, and May 7, 1917.

53. *Falco columbarius richardsoni*—Richardson's Merlin. Frequent in City Park, and even "down town," during the fall migration. Noted at 12th Avenue and Logan Street, November 13, 1913.

54. *Falco sparverius phalæna*—Desert Sparrow Hawk. Frequent in the outskirts, and occasional in all the parks; bulk arrive in April and leave in October, but a few winter at times. Breeds in outskirts.

55. *Pandion haliaëtus carolinensis*—Osprey. One seen in City Park, May 2, 1914, and two, May 19, 1917.

56. *Aluco pratincola*—Barn Owl. One seen by Mr. A. T. Allen on Clayton Street, between Ninth and Tenth Avenues, December 10, 1909.

57. *Asio wilsonianus*—Long-eared Owl. A frequent visitor to all the parks, and occasionally in the residential portions, i.e. one having been caught at Eleventh Avenue and Pearl Street, April 23, 1916. Most commonly seen in the parks in April.

58. *Asio flammeus*—Short-eared Owl. Seen once in University Park, December 23, 1897, and once in Cheesman Park, March 6, 1917.

59. *Cryptoglaux acadica acadica*—Saw-whet Owl. Observed once in Cheesman Park, March 10, 1917.

60. *Otus asio maxwelliæ*—Rocky Mountain Screech Owl. Two records; at University Park, June 6, 1896, and Cheesman Park, March 15, 1917.

61. *Speotyto cunicularia hypogæa*—Burrowing Owl. Not uncommon in the suburbs, and seen occasionally in all the parks; from April to October. Breeds in suburbs.

62. *Glaucidium gnoma gnoma*—Pigmy Owl. Cooke; by Smith, 1888.

63. *Conuropsis carolinensis*—Carolina Paroquet. Cooke, 1861-1862.

64. *Coccyzus americanus americanus*—Yellow-bill Cuckoo. One seen in Cheesman Park, June 22, 1915, and one June 17, 1917.

65. *Ceryl alcyon alcyon*—Kingfisher. Seen in Washington Park, September 14, 1910, and one in City Park, September 20, 1913.

66. *Dryobates villosus monticola*—Rocky Mountain Hairy Woodpecker. Frequently seen in all the parks, and in various parts of the city, from September to April.

67. *Melanerpes erythrocephalus*—Red-headed Woodpecker. Occurs in all the parks and the suburbs, and breeds in suitable places in the outskirts. Arrives in April and departs in October.

68. *Asyndesmus lewisi*—Lewis's Woodpecker. Seen June 17.

1897, at University Park, and in Berkeley Park, August 29, 1914. Nested in Overland Park during the summer of 1917.

69. *Colaptes auratus luteus*—Northern Flicker. Rare straggler, but becoming more frequent each year; seen in Cheesman Park twice in 1915, and twice in 1916.

70. *Colaptes cafer collaris*—Red-shafted Flicker. Common resident, and breeds even near center of city, i.e. Grant Street and Nineteenth Avenue.

71. *Phalænoptilus nuttalli nuttalli*—Poorwill. Infrequent migrant; Cheesman Park, May 15, 1914, and May 19 and 25, 1916.

[1]72. *Chordeiles virginianus henryi*—Western Nighthawk. Common summer resident; arrives about May 15, and departs about October 1; nests in the suburbs.

73. *Chordeiles virginianus sennetti*—Sennett's Nighthawk. Frequent during migration, on dates similar to the above.

74. *Cypseloides niger borealis*—Black Swift. Cooke; once, 1884.

75. *Selasphorus platycercus*—Broad-tail Hummingbird. Frequent in all the parks, and in the outlying districts; arrives about May 15, and leaves about the middle of September. Breeds.

76. *Tyrannus tyrannus*—Kingbird. Fairly common in all the parks and outskirts. Arrives early in May and departs late in September. Breeds.

77. *Tyrannus verticalis*—Arkansas Kingbird. Slightly more common than the preceding in same areas; arrives about April 15 and departs about September 15. Breeds, the young being out of the nest by July 1.

78. *Tyrannus vociferans*—Cassin's Kingbird. Seen once, at Colfax and Clayton Streets, May 17, 1908; and in City Park, July 11, 1917.

79. *Sayornis sayus*—Say's Phœbe. Occurs sparingly in all the parks and the outskirts; arrives the last week in March and departs the last week in September. Breeds; young out of nest by July 15.

80. *Myiochanes richardsoni richardsoni*—Western Wood Pewee. Seen occasionally during the summer in City Park and Cheesman Park. Probably breeds; earliest date noted, May 13, and the latest, September 18.

81. *Otocoris alpestris praticola*—Prairie Horned Lark. Cooke.

82. *Otocoris alpestris leucolæma*—Desert Horned Lark. Resident, and breeds in the outskirts; not common in the parks except

[1] Until the American Ornithologists Union accepts a new classification for the various species and races of nighthawks found in the United States, the light and dark races occurring in Denver may best be listed as above.

in winter. The young are often out of the nest by the first week in April.

83. *Pica pica hudsonia*—Magpie. Resident, and breeds in the outskirts; occurs in the parks more frequently in winter.

84. *Cyanocitta stelleri diademata*—Long-crested Jay. Irregular winter visitor and seen occasionally in all the larger parks. Occurs from the middle of December to May.

85. *Aphelocoma woodhousei*—Woodhouse's Jay. Infrequent fall and spring visitor in Cheesman Park, coming in April, May, and September.

86. *Corvus corax sinuatus*—Raven. One seen over City Park, April 17, 1902.

87. *Corvus cryptoleucus*—White-necked Raven. Cooke; by Aiken, 1871.

88. *Corvus brachyrhynchos brachyrhynchos*—Crow. One noticed flying over Eleventh Avenue and Corona Street, December 7, 1913; and one seen in Cheesman Park, May 1, 1917; is becoming increasingly common to the northeast of the city.

89. *Cyanocephalus cyanocephalus*—Pinon Jay. Rare visitor; one observed in Cheesman Park, May 12, 1913, and one in the same place, September 23, 1914.

90. *Molothrus ater ater*—Cowbird. One seen in Cheesman Park, June 19, 1914.

91. *Xanthocephalus xanthocephalus*—Yellow-head Blackbird. An occasional straggler to all the parks and seen more frequently in the suburbs, where, in the suitable places, i.e. "Manhattan Beach," it breeds. Some remain all winter. Bulk leave in the late fall.

92. *Agelaius phœniceus fortis*—Red-wing Blackbird. Common in the parks with lakes, where it would breed if left undisturbed; also seen in other parks, and many winter in the outskirts.

93. *Sturnella neglecta*—Western Meadowlark. Common all over, and many winter in the suburbs; bulk arrive in March and leave in October. Breeds.

94. *Icterus spurius*—Orchard Oriole. Cooke; by Allen, 1872.

95. *Icterus galbula*—Baltimore Oriole. One seen in City Park, June 28, 1897.

96. *Icterus bullocki*—Bullock's Oriole. Now fairly common all over the city, but formerly more so; bulk arrive the first week in May, and depart towards the end of September. Breeds.

97. *Euphagus cyanocephalus*—Brewer's Blackbird. Frequent in all the parks, and in the outskirts. Arrives early in April, and departs late in October. Breeds, young being found in nest by the first week in June.

98. *Quiscalus quiscula æneus*—Bronzed Grackle. Occurs all

over the city during migration in good sized flocks; arrives late in April or early in May; numerous till last of June; reappears in large numbers early in September and stays until late in October. Breeds in City Park.

99. *Hesperiphona vespertina montana*—Western Evening Grosbeak. Rare visitor; seen at the corner of East Sixteenth Avenue and Washington Street, January 11, 1901, and in Cheesman Park, April 12 and 20, 1911.

100. *Carpodacus cassini*—Cassin's Purple Finch. Noted in Cheesman Park, February 29, 1912.

101. *Carpodacus mexicanus frontalis*—House Finch. Our characteristic native city bird; resident and abundant. Breeds from early in April to early in August.

102. *Loxia curvirostra minor*—Crossbill. Irregular winter visitor; City Park, November 9, 1898, and March 9, 20, and 28, 1899; Cheesman Park, December 6, 1913, and October 19, 1914.

103. *Acanthis linaria linaria*—Lesser Redpoll. Rare winter visitor; University Park, February 18, 1897, and Cheesman Park, December 24, 1916, and March 13 and 31, 1917.

104. *Astragalinus tristis pallidus*—Pale Goldfinch. City Park, May 14, 1914.

105. *Astragalinus psaltria psaltria*—Arkansas Goldfinch. Frequent summer resident in all the parks. Arrives late in March and remains until October. Breeds, building late, beginning nesting about August 1.

106. *Spinus pinus*—Pine Siskin. Common summer resident; often throughout the whole year. Bulk arrive early in March, and many linger till June. Starts nesting about the middle of March. Eggs sometimes found by April 7. Majority disappear in June, probably going to higher altitudes to nest a second time.

107. *Plectrophenax nivalis nivalis*—Snow Bunting. Cooke.

108. *Passer domesticus*—English Sparrow. Ubiquitous. Breeds from March to October. First seen in Denver, by the writer, at the Union depot, in June, 1894.

109. *Calcarius lapponicus alascensis*—Alaska Longspur. One taken at University Park, February 18, 1895.

110. *Calcarius ornatus*—Chestnut-collar Longspur. One seen in Montclair, June 14, 1914.

111. *Poœcetes gramineus confinis*—Western Vesper Sparrow. Infrequent visitor in City Park and Washington Park, April and September; more frequent in outskirts. Breeds.

112. *Passerculus sandwichensis alaudinus*—Western Savannah Sparrow. Taken at University Park, October 1, 1896, and July 1, 1897.

113. *Chondestes grammacus strigatus*—Western Lark Sparrow. Frequent summer resident in the parks and suburbs; arrives early in May and departs about the middle of September. Breeds.

114. *Zonotrichia leucophrys leucophrys*—White-crown Sparrow. Seen in migration, in Cheesman Park, May 3 to about May 15; City Park, April 29, 1917.

115. *Zonotrichia leucophrys gambeli*—Gambell's Sparrow. Common in all the parks in migration, from April 22 to May 21, and September 7 to October 10.

116. *Spizella monticola ochracea*—Western Tree Sparrow. Uncommon winter visitor, University Park, January 1, 1895, and October 26, 1896; Washington Park, January 17, and March 18, 1917.

117. *Spizella passerina arizonæ*—Western Chipping Sparrow. Common summer resident, all over area; arrives about April 1, and leaves about September 15. Breeds.

118. *Spizella pallida*—Clay-colored Sparrow. Common in migration in all of the parks, and in the outskirts; earliest spring date, May 1, and latest fall date, October 25.

119. *Spizella breweri*—Brewer's Sparrow. Fairly frequent in migration, in Cheesman Park and Washington Park; earliest spring date, May 8, and latest fall date, September 28.

120. *Junco aikeni*—White-wing Junco. Infrequent winter visitor; University Park, January 1, 1896, and Cheesman Park, November 8, 1914, and March 5, 1917.

121. *Junco hyemalis hyemalis*—Slate-colored Junco. One detected in Cheesman Park, January 21, 1917.

122. *Junco hyemalis connectens*—Shufeldt's Junco. Frequent winter visitor in Cheesman Park; arrives early in October, and lingers until late in March.

123. *Junco hyemalis montanus*—Montana Junco. Frequent winter visitor; arrives in December and leaves with the preceding form.

124. *Junco hyemalis mearnsi*—Pink-sided Junco. Common winter resident, arriving about the middle of September, and leaving late in April.

125. *Junco phæonotus dorsalis*—Red-back Junco. An uncommon winter visitor; Cheesman Park, February 27, 1912, and February 25, 1916; May 8, 1917.

126. *Junco phæonotus caniceps*—Gray-head Junco. Frequent visitor to Cheesman Park in winter; October 8 to April 22.

127. *Melospiza melodia montana*—Mountain Song Sparrow. Uncommon summer resident within city limits; seen principally along the Platte and Cherry Creek, but also in Cheesman Park and City Park. Breeds, in outskirts.

128. *Melospiza lincolni lincolni*—Lincoln's Sparrow. University Park, June 2, 1896.

129. *Pipilo maculatus arcticus*—Arctic Towhee. One detected in Montclair, January 1, 1913.

130. *Oreospiza chlorura*—Green-tail Towhee. Uncommon migrant; City Park, May 10, 1908, and May 12, 1917, and Cheesman Park, May 3, and September 23 to 30, 1911.

131. *Zamelodia melanocephala*—Black-headed Grosbeak. Common summer resident, throughout the city; arrives about May 1, and departs about September 10. Breeds; eggs sometimes laid by the last of May.

132. *Passerina amœna*—Lazuli Bunting. Infrequent summer resident, but more frequent as a migrant; arrives the last week in May, and leaves the last week in August. Nested in Cheesman Park, the last week in June, 1916.

133. *Calamospiza melanocorys*—Lark Bunting. Infrequent summer resident in the parks, but common in the outskirts; arrives early in May, and departs about September 15. Breeds in the outskirts.

134. *Piranga ludoviciana*—Western Tanager. Uncommon migrant; Washington Park, May 23-25, Cheesman Park, June 3, August 29, and September 15, 23.

135. *Piranga erythromelas*—Scarlet Tanager. A male seen in Cheesman Park, June 6, 1912.

*136. *Piranga rubra cooperi*—Cooper's Tanager. Cooke; by Henshaw, 1873.

137. *Petrochelidon lunifrons lunifrons*—Eave Swallow. Common in migration. Now infrequent breeder in outskirts. Arrives late in April and departs as late as October 3.

138. *Hirundo erythrogastra*—Barn Swallow. Common in migration; arrives about May 1, and leaves about the middle of September. Infrequent breeder in outskirts.

139. *Iridoprocne bicolor*—Tree Swallow. Becoming quite uncommon, even in migration. Not detected breeding for years. Arrives with the preceding species, and not seen after September 1.

140. *Tachycineta thalassina lepida*—Northern Violet-green Swallow. A large flock in Washington Park, May 22 and 25, 1917.

141. *Stelgidopteryx serripennis*—Rough-wing Swallow, "Sand Martin." Common in migration; arrives about the middle of April, and departs the last of August; a few breed in the outskirts.

142. *Bombycilla garrula*—Bohemian Waxwing. Irregular winter visitor; a small flock in Berkeley, February 4; and on Clay-

*This record is based on a misidentification, the skin (now in the Colorado Museum of Natural History) proving, on reëxamination, to be one of Piranga rubra rubra. Summer Tanager.

ton Street, between Fourteenth and Colfax Avenues, February 5, 16, and 18, 1899; all over the city in great numbers, from February 22 to April 8, 1917, when the last two were seen in Cheesman Park.

143. *Bombycilla cedrorum*—Cedar Waxwing. Seen in Berkeley, February, 1906.

144. *Lanius borealis*—Great Northern Shrike. Infrequent winter resident; City Park, November 3, December 24, and March 6; Cheesman Park, November 22 and December 25.

145. *Lanius ludovicianus excubitorides*—White-rump Shrike. Irregular visitor; City Park, April 27 and September 7; Cheesman Park, April 29.

146. *Vireosylva olivacea*—Red-eyed Vireo. Cooke; by Smith, 1892.

147. *Vireosylva gilva swainsoni*—Western Warbling Vireo. Fairly common summer resident in all the parks; arrives early in May and remains until late in August. Breeds.

148. *Lanivireo solitarius cassini*—Cassin's Vireo. Previous to 1915, was an irregular visitor during migration. Some stayed in all the parks all of the summer of 1916, the last being seen on September 8; the first being seen May 30.

149. *Lanivireo solitarius plumbeus*—Plumbeus Vireo. Frequent migrant; a few remain all summer in the city and in Cheesman Park, May 31 to September 11.

150. *Vireo belli belli*—Bell's Vireo. Cooke; by Smith, 1903.

151. *Vermivora virginiæ*—Virginia Warbler. Detected once in Cheesman Park, September 7, 1915.

152. *Vermivora celata celata*—Orange-crown Warbler. One seen in Cheesman's Park, May 3, 1914.

153. *Compsothlypis americana usneæ*—Northern Parula Warbler. Cooke; by Smith, 1904.

154. *Dendroica æstiva æstiva*—Yellow Warbler. Common summer resident all over the city; arrives the first week in May, and departs late in August. Breeds.

155. *Dendroica cærulescens cærulescens*—Black-throated Blue Warbler. One seen in Cheesman Park, June 13 and 14, 1915.

156. *Dendroica coronata*—Myrtle Warbler. Not common, but seen during migration in all the parks. Earliest date, April 29, latest, May 23.

157. *Dendroica auduboni auduboni*—Audubon's Warbler. Seen in University Park, October 7, 1896, and in City Park, April 29 to May 20, 1917.

158. *Dendroica magnolia*—Magnolia Warbler. One seen in Cheesman Park, May 20, 1913.

159. *Dendroica cerulea*—Cerulean Warbler. Cooke; by Henshaw, 1873.

160. *Seirus aurocapillus*—Ovenbird. Cooke; by Wernigk, 1862.

161. *Seiurus noveboracensis notabilis*—Grinnell's Water-Thrush. Cooke.

162. *Oporornis tolmiei*—Macgillivray's Warbler. Seen occasionally in Cheesman Park; August 27, 1912; September 6, 1913; October 10 to 13, 1914, and September 29, 1916.

163. *Geothlypis trichas occidentalis*—Western Yellow-throat. "Manhattan Beach," June 8 and 10, 1917.

164. *Icteria virens longicauda*—Long-tail Chat. One seen on the Platte River, near Overland Park, July 10, 1896.

165. *Oreoscoptes montanus*—Sage Thrasher. Fairly frequent in migration; seen in the outskirts and the parks only in the fall, September 5 to 15.

166. *Mimus polyglottos leucopterus*—Western Mockingbird. Irregular summer resident. Seen as early as March 8, in Cheesman Park, and eggs have been found in University Park by May 26; leaves by the first week in August. Would doubtless be much more common, were it not so persistently hunted to secure its young for cage birds.

167. *Dumetella carolinensis*—Catbird. Noticed in Cheesman Park, August 31 and September 24, 1910.

168. *Toxostoma rufum*—Brown Thrasher. In Montclair, May 25, 1917.

169. *Salpinctes obsoletus obsoletus*—Rock Wren. Seen occasionally during migration, in all the parks and in the outskirts, from April 27 to June 15, and from August 19 to September 25.

170. *Catherpes mexicanus conspersus*—Canyon Wren. Infrequent migrant; Washington Park, May 8; Cheesman Park, September 13 and 18; Montclair, May 5.

171. *Troglodytes aëdon parkmani*—Western House Wren. Regular migrant and uncommon summer resident. Seen most often during the third week of May and the first week of September. Nested in Cheesman Park, the summer of 1917.

172. *Nannus hiemalis hiemalis*—Winter Wren. Seen in University Park, July 8, 1896, and in Cheesman Park, May 10, 1908.

173. *Certhia familiaris montana*—Rocky Mountain Creeper. Frequent winter visitor to all parts of the outskirts and the parks, and observed well "down town" once in a while; occurs from the last of December to the last of February.

174. *Sitta carolinensis nelsoni*—Rocky Mountain Nuthatch. Irregular visitor, Cheesman Park from August 17 to September 18, City Park, December 5.

175. *Sitta canadensis*—Red-breasted Nuthatch. Cheesman Park, November 3, 1910.

176. *Panthestes atricapillus septentrionalis*—Long-tail Chickadee. Regular winter visitor; arrives early in October and departs about April 15; often occurs well "down town."

177. *Panthestes gambeli gambeli*—Mountain Chickadee. Irregular winter visitor, Cheesman Park, October 29, 1915 to February 25, 1916, and seen occasionally all of the winter of 1916-17, in Cheesman Park.

178. *Regulus calendula calendula*—Ruby-crown Kinglet. Noted in City Park, May 29, 1907, and April 28 to May 8, 1917.

179. *Myadestes townsendi*—Townsend's Solitaire. Frequent in migration and occasionally a winter resident; has been noticed in City Park and Cheesman Park in February, April, August (24), September, October and December.

180. *Hylocichla fuscescens salicicola*—Willow Thrush. Seen in Cheesman Park, September 12, 1913, and June 9, 1917.

181. *Hylocichla guttata auduboni*—Audubon's Hermit Thrush. Frequent in migration in all the parks and at times well "down town"; arrives early in May, sometimes remains until late in June, and reappears late in August.

182. *Hylocichla guttata nanus*—Dwarf Hermit Thrush. Cooke; by Smith.

183. *Planesticus migratorius migratorius*—Eastern Robin. Seen wherever the next species occurs; not very common, but becoming more and more so each year. Breeds.

184. *Planesticus migratorius propinquus*—Western Robin. A common summer, and occasional winter, resident; the bulk appear about the middle of March and leave about the middle of October. Breeds, and eggs are often found by the middle of April.

185. *Sialia sialis sialis*—Eastern Bluebird. Cooke; by Dille, 1899.

186. *Sialia mexicana bairdi*—Chestnut-back Bluebird. One seen in Cheesman Park, April 9, 1907.

187. *Sialia currucoides*—Mountain Bluebird. An infrequent summer resident, but common in migration. Occurs most commonly from March to October, but also every other month in the year. Would be a common breeder, if not driven out by the English Sparrow.

HORNED LARKS IN THE PROVINCE OF QUEBEC

(*Otocoris alpestris praticola.*)

By L. McI. Terrill.

Towards the close of the long Canadian winter, the earliest signs of returning spring are very welcome, and none more so than that first small harbinger, the Prairie Horned Lark (*Otocoris alpestris praticola*). There comes a time during the latter part of February when the south wind and sun combine in softening the atmosphere. Should you attempt to look the sun in the face on such a day you will probably see spots or sun-dogs. The snow, too, is affected; it has a honey-combed appearance and dark patches point to fast-appearing soil. Railroad tracks, hillocks, and manure-piles in the open country are quite bare of snow and steaming with evaporating moisture. On such a day I fully expect to see the Prairie Horned Lark. They are easily recognized: sometimes a dark form will be seen walking or running gracefully over the snow, stopping to investigate places where the earth is showing; again a small company will be found sheltered in the lee of a manure-heap, particularly if the wind is high. Roadways, and especially railway tracks, are favourite feeding resorts.

The males arrive first and show little inclination towards flocking, often being seen singly, though sometimes in groups of from two to ten birds, especially when feeding on railway tracks or other places where grain and seeds are abundant. Frequently a sweet liquid song, delivered from some mound or fence-post, will be the first intimation of their arrival—the first spring song, and doubly sweet for that reason. If the weather is fine they usually sing on arrival, or soon after, and the song is more or less commonly heard throughout their residence here. This song is a difficult one to describe. One associates the name "lark" with all that is sweet and melodious, and although my acquaintance with the European Skylark is not first hand, its family name, from laudo (to

laud) is suggestive of song-ability. To laud, however, literally means "to praise to the skies," which is descriptive of a song-habit rather than song-ability. As with our own Lark its abandon and freedom of utterance are responsible for the saying "merry as a lark." It is a thorough exponent of the theory "Laugh and the world laughs with you," hence the terms "sky-larking," and "out for a lark."

Though our own lark "praticola" has similar mannerisms and delivery, the volume of its song is evidently considerably less, as the average pedestrian appears to know nothing about it.

Ones opinion is a little biased in its favour on hearing the first bird and the first song of spring, but after repetitions a scratchy or "screechy" quality is detected. Once, while crossing a wire fence, I was so uncharitable as to compare it with the squeaking of wires pulled through the staples—but then this self-same squeak was due to exertions in detaching myself from the uncharitable barbs. Another song, less common, though frequently heard during the nesting season, especially in the early morning and at twilight, is probably comparable in some degree to the performance of the European Skylark. Rising toward the sky, higher and higher, the bird gradually disappears from view, and while you are wondering what has become of it a glad song floats down, softened by distance, but still distinct. It consists mainly of several notes repeated over and over, sometimes as many as a dozen times. For brevity I write this in my note-book "the pump song." When I first heard it I was reminded of the action and distant sound of a rusty hand-pump in the dry season. The first notes are similar to the simple song, but the bird is in super-happy mood, and continues repeating the second bar, with a little screechy catch between each repetition, and finishes—just as the water reaches the spout of the pump—with a jumble of liquid notes, similar to the ending of the simple song. This song probably has the same significance as the aerial love song of the Woodcock, being most commonly heard when the female is incubating. I have

also frequently heard it delivered from a mound or other elevation on the ground.

Our earliest spring migrant, the Prairie Horned Lark, is also the most regular of the earlier birds, not excepting the Crow. A few Crows occasionally winter, but the Lark never, as far as I am aware.

Although the Prairie Horned Lark returns with the south wind it does not necessarily proclaim the passage of winter, as sometimes a month of wintry weather follows its return. However its tinkling song imbues us with at least a portion of its hopeful anticipation, and helps to tide over the bleak spots.

During fifteen years the average time of arrival at Montreal, by my records, was March 1st (February 29th for leap years): extreme dates were February 14 (1915) and March 9 (1905). This refers to the male bird, which arrives a week or more in advance of the female.

When in flight, with each sweeping undulation, or, as is often the case, at irregular intervals, the Lark emits a single whistled note, very similar to the first part of the Snowbird's flight notes, sometimes followed by a second note. To me these notes seem best expressed by the syllables "pee" and "Pee-u." While choosing a nesting site and during early nesting operations its vocal activity is especially marked. At this time they are often found in companies of three—two males courting one female. They do not seem to be very quarrelsome beyond chasing one another back and forth, but give vent to their feelings vocally. One of the most common utterances sounds something like "seet-te-sweet" or "seet-t'seet," with variations. Another musical call "pee-u-wee," or "pee," followed after a pause by "pee-u-wee" (with the accent on the last syllable), has a decided plover-like quality and is the principal note of alarm. This call is seldom or never uttered before nesting is well under way, and is often shortened to a whistled "pee-u," especially after the young are hatched.

During the period of incubation the Larks become more

quiet and their silence is pronounced when the young have left the nest. I have often watched one slipping away with an exaggerated slowness, proclaiming uneasiness by nervously picking at the soil, possibly with the pretense of feeding. Even with these indications it is not always easy to pick out the old-grass coloured backs of the young squatting motionless by some grass tuft.

A great deal has been written in confirmation of the theory that the Prairie Horned Lark has gradually extended its range eastward from the prairies. In any case it is not partial to thickly wooded or newly cleared land. In such a locality at Bury, Compton Co., Que., 125 miles, S. E. E. of Montreal, it was uncommon during the years 1899-1902. To the north, in the Laurentian Hills, I have seen it sparingly in the cleared valleys of the North, Rouge, and Lievre Rivers, as far as Mt. Laurier, at the end of the railroad, about 150 miles N. N. W. of Montreal. My observations, however, particularly with regard to nesting habits, refer to the valley of the St. Lawrence River, in the vicinity of Montreal. Here they are most abundant within a mile or two of the river shore. For nesting purposes, rolling pasture land with scant vegetation is preferred; often so poor as to produce only a growth of mosses and lichens. A sheep pasture is typical of the Lark's choice. Again they will be found associating with the Killdeer Plover, nesting in a stony field, or in one in which there is exposed rock strata. Sometimes other situations are chosen, such as the close cut stubble of grain fields, and once a nest was found in the furrow of a ploughed field.

As with other prairie nesting birds, suitability as a lookout point is a factor in the Lark's choice of a nesting site; an abrupt slope is never chosen. Cultivated fields in the vicinity of the nest are desired as the Lark feeds largely in ploughed land—in fact I have found it nesting most commonly within a few hundred yards of farm buildings; the neighborhood of woods and swamps is avoided.

The greater number of birds commence nesting during the

second or third week of April, according to the weather, although there are always a few earlier nesters. The earliest record I have was March 14th (1915), when a nest was found commenced. On April 2nd this nest held four young about one day from the shell.

While snow still covers the ground in late March or early April, the birds have little choice of a nesting place and naturally choose the crown of some small elevation, such places being the only suitable spots free of snow. When the soil is sufficiently thawed, and while it is still moist, a bowl-shaped cavity, four to five inches in diameter, is excavated. I have several times seen both birds quite close to these excavations, but have never been able to determine whether or not both assist in the work. The soil taken from the cavity is piled on one side and later becomes an adjunct of the nest, forming an embankment, which possibly serves as a wind-break. This excavated soil is always found in little balls, which tends to prove that it is always scraped out while the ground is wet.

When the excavation is complete the Lark collects material, to be found near at hand, short pieces of withered grasses, seed tops and roots of grass or grain, which is finally pressed into a thick walled nest, averaging, in outside diameter, 4 inches; inside, 2.4 inches; outside depth, 2.2 inches; inside depth, 1.8 inches. The rim of the nest is usually flush with the soil and is very neatly finished and blended with the surroundings, though there is no attempt at weaving or binding, and the nest readily falls to pieces when removed.

Material similar to the body of the nest is used for lining, while generally a little old thistle down is added, and sometimes a small feather or two. The number of eggs deposited is most commonly four; often three composes the set, rarely two, and on one occasion I knew of five being laid.

Eggs of this species exhibit less variation in markings than those of most birds. The main peculiarity in a large number of local specimens lies in the comparatively uniform colouration, pigment being distributed in minute dots, usually

over the entire shell, with a slight tendency to form a wreath at the larger end.

Absence of blotches and the pale-coloured pigment produce a delicate appearance—a fragile looking egg indeed, to be found amidst banks of snow.

Variation in shape and size is considerable. The largest set examined averaged .92x.65 of an inch; the smallest, .78x.57; while the average size of ten sets was .85x.61.

The largest and smallest individual eggs were .96x.66 and .76x.57.

One would think that the Lark, nesting so early in the season, would sit very closely, but apparently such is not the case. It is the exception to even see the bird leave its nest, and during the early stages of incubation it will remain at a distance, as long as there is a human being in the vicinity.

On a few occasions I have flushed a sitting bird when within a few feet of her, and at other times, particularly when incubation was advanced, I have seen them leave at distances varying up to 150 yards. On all occasions the departure was similar, a quick bound into the air, directly from the nest, when the bird would go dipping away and alight at some distance. When flushed from its nest or from the vicinity it is not always easy to distinguish the Lark from the Vesper Sparrow, unless you see it leave the nest. It invariably flies away in silence, contrary to its usual custom. However if you watch the bird as it skims the surface of the soil in prolonged undulations, its larger size and the fact that it generally alights on the ground and stands erect to peer at the intruder, will usually serve to identify it.

When the Larks are at all vociferous you may take it for granted that the nest, if there is one, is at some distance.

I have frequently attempted to watch a bird return to its nest, but with the excepion of a few instances, decided that I was not a man of leisure. Occasionally the bird is provoked into disclosing the nesting site. On April 16, 1905, during a sudden snow flurry, a Lark passed over my head, quickly veered toward the ground and vanished! Approach-

ing the spot I looked in vain for the bird until I finally caught sight of her flying away, and soon found the nest, plainly visible with its single egg, the only dark spot in the snow-covered area. The following year, on April 1, while trying my skill, pitching a heavy stone with two companions, a Lark flew towards us, and dipping close to the ground flew over the spot where the stone had fallen. We soon found a newly completed nest within a few feet of this stone.

Inclement and uncertain weather is naturally the chief vicissitude of a ground nesting bird at this early date. After the Larks have commenced nesting we frequently have storms with a fall of wet snow or rain, followed by a lower temperature, sufficient to glaze the fields with an icy covering. This is often disastrous and the birds have to recommence. These conditions were especially noticeable during the springs of 1907, 1912-13-14-15.

After a period of eleven days' incubation the young make their appearance, and during early growth their parents spend much time in adjacent ploughed fields.

Although I have little exact data on the food supplied to the young, I know that many insects in the larval stage are taken, in fact, at this season most insects are still in that condition. I believe that the early nesting of this species is more than merely coincident with the operations of ploughing and harrowing the soil, which are usually in progress at the time young Larks are hatched. This repeated working of the soil keeps a constant supply of larva exposed at a time when the need of the Larks is greatest and competition with other species least. They are thoroughly in accord with the proverb "It's the early bird that catches the worm." In this respect it would be interesting to compare the habits of Larks nesting in virgin prairie districts. Unfortunately I have found little data, beyond nesting dates, for prairie-nesting Larks. Some authorities describe western and southern birds as comparatively late, but whether for birds nesting in an untilled region is not stated.

The male bird is as busy as his mate at this season and has

little time for song, usually confining his efforts to early morning and late afternoon. So far as I have observed, the female alone incubates, but at least the male assists in feeding the young, and is very solicitous of its welfare. On one occasion I almost stepped on a young Lark, when the male bird jumped into the air as if to attack me. Returning to his perch a few feet distant he stretched himself, head up and horns raised, to such an extent as to resemble a Killdeer Plover more than a Lark. On my retiring a few feet he flew to the young bird and fed it.

Perhaps early nesting Larks have more troubles to contend with in raising their young than most birds. Late snowstorms causing nest-abandonment have been previously mentioned, but they have other enemies. At the time incubation is completed many birds of prey have arrived, and considering that the smaller migrants present are comparatively few, the Larks are bound to receive considerable attention. Possibly predacious animals also take their toll, although, happily, I have no records. The protectively-coloured backs of the adult Larks, with the highly developed watchfulness of this species, keeps them fairly safe from enemies that both soar and creep. It is the young that suffer: of four nests under observation in one locality, during the spring of 1915, only in one instance did the young safely leave the nest. One of these, found April 11, and revisited on April 17, contained broken egg-shells on the latter date, and apparently had been trodden on by some animal.

Another bird safely hatched her young and reared them until they were almost ready to leave the nest. On April 25 the well-spotted feathers, wind-blown in every direction, were all that remained of this brood. This was probably the work of a low-lying Marsh Hawk, which I had several times seen diligently hunting in the vicinity.

Another nest containing a single egg on April 25 was abandoned for some uexplained reason. The fourth nest, found commenced on April 5 (a mere hollow, with no nest material) contained three eggs on the 11th and four on the

12th, and on the 23rd newly-hatched young (perhaps ten hours from the shell), with eyelids unopened and small patches of grayish-white down showing.

Visiting this nest again on the 25th I found considerable development in the nestlings—eyes well-opened and good sized patches of down on either side of the forehead, occiput, back and wings. How narrowly this brood also missed a tragic end was apparent in the track of a farmer's wagon which had passed a few feet away, while cow-manure had been scattered in all directions, one fork-full almost touching the nest. On my next visit (May 1) the condition of the nest showed that the young had recently left, probably the same morning.

In this instance the entire operation, from the time the nest was commenced until the young had vacated, occupied twenty-five days, or possibly a little less. Three days were occupied in nest-construction, four in which to deposit the eggs, eleven (plus) for incubation, and seven to mature the young sufficiently to enable them to leave the nest.

Having devoted very little time to the Larks during May and June, my notes at this period are very scanty, although I am well aware that this species nests a second and possibly a third time.

After a period of quiet, incident to the care of the first brood, the song becomes more frequent during the month of May. The wide first-nesting range, from late March throughout April, makes it difficult to say whether birds found breeding in early May have already raised a brood or not. May 15 (1915), I flushed a Lark near a fresh excavation. By the 22nd this nest was fully lined, but for some reason was later deserted. This was probably a second nesting, as I found another nest, about fifty yards distant, in which a brood had been raised earlier in the season.

During the heat of summer the Prairie Horned Lark is not much in evidence and is usually to be seen in family groups. It sings less and the earlier activity is gone. However, the cause of seeming scarcity is due more to the fact

that one is detracted by the many other birds with more pronounced songs and actions. From the latter part of August, throughout the fall months, it is more gregarious—family groups collecting into small flocks. This is especially noticeable on river shores, where they gather to feed, often in company with various species of sandpiper and plover, and later in the season with Pipits, Horned Larks (*alpestris*), and Snowbirds; hence the common appellation "shore-lark." Flocks are seldom very large—more often from twenty to fifty birds—and are not compact as flocks, say, of the European Sparrow, which arise in a cloud; whereas, the Larks, with a startled whistle, keep bounding up just ahead of you, and a company of fifty will sometimes occupy several acres. The Prairie Horned Lark evidently finds the fall weather agreeable, as it sings more commonly after the extreme heat of summer is passed. Towards the end of October migration is at its height, and usually by the beginning of November few remain. My latest record was November 21 (1915).

Following is a summary of migration for the past nine-

		First Arrivals	Earliest Song	First Nesting	Condition	Latest Song	Last Seen
Bury, Que.	1897	March 6					
	1898 (mated)	March 15	March 15				
	1899	March 13	March 13				
	1900	March 18					
	1901	March 8					
	1902	March 9					Oct. 25
	1903	March 7		April 26	Four young a few days old		Oct. 11
	1904	March 6				Oct. 23	Oct. 23
	1905	March 9	March 19	April 16	with one egg		Oct. 22
	1906	Feb. 23	March 4	April 1	two nests fully lined		Nov. 18
	1907	Feb. 24		April 7	two nests under construction		Oct. 20
	1908	March 1	March 8	April 12	nest commenced		Nov. 15
	1909	Feb. 28	Feb. 28	April 4	three fresh eggs	Oct. 25	Oct. 25
	1910 (mated)	March 5	March 6	March 27	two nests almost completed		Nov. 6
	1911 (mated)	March 5		April 9	three nests commenced	Oct. 15	Nov. 5
	1912 (mated)	March 10		April 7	five nests, one completed	Oct. 6	Nov. 10
	1913	Feb. 23	March 16	March 23	four nests, one completed	Oct. 12	Nov. 2
	1914	March 8	April 8	April 5	one completed nest		Nov. 15
	1915	Feb. 14		March 14	nest commenced	Oct. 24	Nov. 21

teen years. It will be noticed that four records of spring arrivals are for mated birds. Allowing for a lapse of at least seven days between the arrival of male and female, and eliminating the four records made at Bury, Que., we have an average date of arrival at Montreal, during fifteen years, of March 1 (Feb. 29 for leap years).

The thirteen records of fall departure give November 3 as the average date on which the last birds were seen.

THE HORNED LARK (*Octoris alpestris alpestris*).

While watching Prairie Horned Larks during April, when they were paired and nesting, it has been customary for me to see flocks of larks, sometimes as many as a hundred, but usually between fifteen and fifty birds. Formerly I thought these "*praticola*" on their way to more northern districts, but later investigation invariably proved them to be *O. a. alpestris*. In the vicinity of Montreal they usually arrive more than a month later than "praticola"; the average time during seven years being April 11.

Throughout April I have many times had the opportunity of direct comparison between the two species. The contrast between a solitary Prairie Horned Lark, giving utterance to song or alarm, and the Horned Lark, with its gregarious habits, startled whistle, unsettled manner, and absence of song, easily proclaims the fact that it is still in migration, and not even thinking of nesting.

In the fall, when both species are gregarious, it is more difficult to secure records without indiscriminate shooting, and my scattered notes for this season are not sufficient to warrant conclusions.

Following is a summary of migrations for this species. Omissions of dates of departure are due, mainly to my failure in recording them:

1906—First seen, April 8. Last seen, ———.
1909—First seen, April 4. Last seen, May 2.
1910—First seen, March 28. Last seen, ———.
1911—First seen, April 16. Last seen, April 23.
1912—First seen, April 28. Last seen, ———.

1913—First seen, April 13. Last seen, May 4.
1914—First seen, April 10. Last seen, ———.

I cannot resist alluding to the several outward resemblances, in habit and appearance, between shorelarks and shorebirds (*Limicolae*). The whistled "pe-u," appearance while walking and running, and the partially ringed neck of Otocoris all recall certain shorebirds; and coupled with the habit of associating with shorebirds during migration, these resemblances are responsible for the destruction of many larks by mistaken gunners.

St. Lambert, Que.

ANNOTATED LIST OF THE WATER BIRDS, GAME BIRDS AND BIRDS OF PREY OF SAC COUNTY, IOWA.

By J. A. Spurrell.

My purpose in writing this list is to place on record personal observations, which if trusted to memory or even to note-books would be lost, and also much data gathered from the pioneers of the county, which is much more valuable than my own observations.

My personal interest in birds dates from my early childhood. When I first began to keep a record of the species identified in July, 1907, I had a local list of about fifty species. My first Reed's Bird Guides were purchased in 1906. They had been preceded by a complete file of "Birds and Nature" and were followed by many other bird books. After that my local list grew steadily until it now numbers one hundred sixty-five species. In my own identifications I have used extreme care in making records of species, excluding everything doubtful. I have used eight-power stero-binoculars the last four years. I have also identified all dead specimens found. In gathering data from the pioneers I have used extreme care to differentiate species, excluding everything doubtful.

I am indebted to the following people for records and information. Mr. C. Orville Lee of Sac City, whose parents came to Sac County in 1854, and who was born in 1860. In his youth he improved all opportunities for hunting and has always been a keen observer of things natural, being still interested in the subject. Mr. Hugh Cory of Sac City, who came to Sac County in 1854 as one of the first party of white settlers. Mr. Shelt Tiberghien of Sac City, who came to Sac County in 1856. The earliest settlers obtained most of their living from the game animals and birds and were keen observers of them. Mr. Harry Colburn of Sac City, furnished one observation, and Mr. Platt Armstrong of Lake View, who came to the county in 1878, a few. Dr. A. S. Hayden of Wall Lake, who came in 1873, and his wife, who came in 1878, also their daughter, Mrs. George May, have furnished much valuable data. My father, John Spurrell, who came to Wall Lake in 1875, contributed some data. One of my most valuable sources of data was Mr. and Mrs. H. B. Smith of Odebolt, who came to the county in 1876. They not only furnished information but had formed a collection of mounted birds which included nearly all the game birds of the region, besides many land birds. Mr. Smith is now dead, but his wife still maintains the collection, which they had started many years ago in Ohio. I visited them July 28, 1913, while Mr. Smith was living, and obtained information about all the specimens taken in Sac and adjoining counties.

While, in general, the topography of Sac County is that of a treeless prairie, except for the now numerous planted groves, there are two distinct types of land surface. The eastern half of the county is within the Wisconsin glaciation, characterized by very gentle swells, a few low knobs, a level landscape, and very poor drainage conditions. At the time of settlement all the low-lying land in this area was either pond, marsh, or slough. The roads wound around, following the ridges of the low swells. At the present time the roads follow section lines, all of the ponds and the great majority of the marshes and sloughs having been drained.

Correction pond, Lard lake, Rush lake, and many smaller ponds are now farm land. This section is drained by the Raccoon river, locally called the "Coon," and its tributaries, Cedar river and Indian creek. The drainage from Wall lake, the only one remaining, flows into Indian creek. The Raccoon river enters the county on its north line about six miles from its northeast corner, flowing in a southerly direction about eighteen miles, when it turns and flows eastward, its waters finally reaching the Mississippi. The "Coon" river has cut a broad valley about fifty feet deep. The river follows a winding course through this valley, sometimes cutting into the sides and forming steep bluffs. The bluffs and part of the bottom lands are now timbered. At the time of settlement its timber fringe was from one to four miles broad. The enlarged parts were known as Grant Grove, located where the river turns east; Cory Grove, about three miles south of Sac City; and Lee's Grove, about eight miles north of Sac City. The first settlements in the county were at Grant Grove, which became Grant City, and at Sac City, in the year 1854. Until about 1870 there were very few settlers other than along this timbered well drained strip along the "Coon" river. Having so limited a habitat the forest-loving game birds were speedily exterminated.

The western half of the county is within the Kansan glaciation and characterized by a gently rolling to roughly rolling surface, the highest hills being about sixty feet, with a mature drainage and no lakes, ponds, or marshes. This section is drained by the Boyer river and a few small creeks tributary to it, all their waters finally reaching the Missouri river. The Boyer river occupies a flood plain about a mile wide, across and down which it follows an exceedingly tortuous course. It has a local reputation of being the crookedest river there is. Its general direction is southerly until within four miles of the south line of the county, when it turns abruptly southwest.

The two glaciations are divided by the Wisconsin moraine, which is several miles broad, and partakes of the general

rolling topography. A portion of it is locally known as the "Big Ridge." For about twenty miles its eastern border is followed by Indian creek flowing south. The creek then turns and flows east into the Raccoon river, passing within one-fourth mile of Wall lake, the waters of which flow several miles to reach it. Wall lake is situated just south of the turn in Indian creek. It has an irregular outline, does not exceed ten feet in depth at the deepest part, and in general is shallow, covering an area of about nine hundred and sixty acres, or approximately two square miles. It gets its name from an irregular "wall" of glacial boulders or "nigger-heads," which were piled around its shores by the ice expansion of winter and the break-up in spring. Only small portions of the "wall" remain, most of it having been long since hauled away for barn foundations.

Wall lake and the Boyer river are connected by a depression which appears to be a pre-glacial channel of the Boyer river. This broad flat valley extends directly across the Wisconsin moraine. It extends southwesterly from Wall lake to the Boyer river, passing to the south of the town of Wall Lake. The two miles of this valley next to the Boyer river are lower than the banks of the Boyer and this depression is flooded by back-water from the Boyer river every spring and some years very frequently during the summer. The summer of 1915 it was full of water all summer, but in ordinary years the water runs out very slowly, leaving the "Goosepond," as it is locally known, dry during late fall and winter. In times of extreme high water, which occur every five to ten or fifteen years, the waters from the Boyer entirely flood the very low divide at the east end of the "Goosepond" and flow into Wall lake, thus mingling the waters of the Missouri and Mississippi drainage systems, sufficiently so that aquatic forms of life could pass from one to the other. An elaborate plan for draining the "Goosepond" is now being projected.

Since the "Goosepond" is nearly always flooded in the spring, it is a favorite resort of the migrating waterfowl and

shore birds, the more so since the neighboring Wall lake is usually ice bound for some time after the earliest migrants arrive.

The tales the early settlers tell of the abundance of waterfowl and prairie upland game birds seem almost incredible today. Mrs. E. B. Hayden said, "I have seen the entire east end (about one square mile) of Wall lake so thickly covered with ducks during the spring migration that the water seemed black." Dr. Hayden said, "Every pond and mud-hole was covered with broods of young ducks."

According to Mr. Lee or Mr. Smith, swans, Canada geese, sandhill cranes, prairie chickens, upland plover, and long-billed curlew nested within the county, besides the following ducks, ranked in the order of abundance as nesting species: blue-winged teal, green-winged teal, mallard, spoon-bill, pintail, wood duck, black head or scaup, and redhead. Mr. Tiberghien also reported the whooping crane as nesting.

Today, most of these do not nest in the county at all, only prairie chickens, mallards, blue-winged teal rarely nesting. Mr. Lee stated that ninety per cent of the ducks raised in Iowa today are blue-winged teal.

Mr. Smith ranked the ducks in order of abundance as mallards, pintail, and teal as being common, then wood duck, canvas-back, and hooded merganser next in order of abundance, with the old-squaw as the rarest of all. The time of which he spoke was from 1876 to about 1885.

Species Listed.

Eared Grebe (*Colymbus nigricollis californicus*). The only record is a speciemn in the Smith collection. I have seen large grebes on Wall lake, but could not certainly identify them at the time.

Pied-billed Grebe (*Podilymbus podiceps*). I have found this grebe to be tolerably common on Wall lake and the "Goosepond" during migration. My earliest migration date is April 11, 1915. There are two specimens in the Smith collection. I am not aware of its breeding.

Loon (*Gavia immer*). Mr. Lee reported that loons nested, their young being seen, on Rush and Lard lakes north of Sac City, every year until 1900. Loons were also reported by Mr. Tiberghien.

Herring Gull (*Larus argentatus*). I first identified it April 11, 1915, when I saw a single bird in winter plumage in the "Goosepond." Mrs. George May also reported three seen in the "Goosepond" April 16, 1911. There is one specimen in the Smith collection.

Franklin Gull (*Larus franklini*). Specimen in the Smith collection. This species is an abundant migrant both spring and fall. At both seasons, a flock will often follow a farmer plowing for hours at a time, usually coming in the forenoon and again in the afternoon, at times alighting on the plowing and resting for a half hour or less. They follow the plow very closely and I have seen them swoop down, capture and swallow white grubs, angleworms, and other insects. While disking fall plowed land in the spring I have seen a Franklin gull capture and swallow an adult prairie white-footed mouse, although the mouse went down with difficulty. Another farmer reported the gulls capturing an entire family of mice which were plowed out.

Occasionally in the spring I have seen huge flocks of these gulls, after much preliminary circling, alight upon a bluegrass pasture, resting there for some time, in such numbers as to make the ground appear white. In the fall the young birds, with different plumage from the adults, make up a majority of the flocks, which frequently stay in the vicinity several weeks. Sometimes all members of a flock will scatter far apart and start circling *high* in the air, until the sky is filled with their soaring and circling forms as high as the eye can distinguish them. In feeding they range over the entire country, not confining their attention to bodies of water. When feeding they usually fly in loose straggling flocks, but when migrating, in a compact flock. Mrs. George May reported them in "Goosepond" April 14, 1911.

MIGRATION DATA.

	Spring.			Fall.		
Year	First seen.	Became common.	Last seen.	First seen.	Became common.	Last seen.
1904—April 21.						
1906—May 3.						
1908—April 25.	May 2.	May 30.		Sept. 30.	Sept. 30.	Nov. 6
1909—April 22.	May 2.	May 31.		Oct. 11.	Oct. 17.	Nov. 6
1910—April 30.	April 30.	June 27.		Oct. 6.		Oct. 27
1911—April 19.	April 19.	May 11.		Sept. 28.	Sept. 28.	Oct. 30
1912—April 26.	April 26.	May 20.		Sept. 23.	Oct. 4.	Nov. 5
1913—April 22.	May 4.					
1914—April 29.	May 1.	June 6.				
1915—May 3.	May 16.					Oct. 23

Forster Tern (*Sterna forsteri*). A rare migrant. Specimen in the Smith collection. I once saw three large terns over Wall lake in the fall, which I took to be this species, but was unable to distinguish for certain between this species and the common tern before they flew.

Least Tern (*Sterna antillarum*). A rare migrant. I found one shot by hunters, on the shore of Wall lake, September 29, 1912. I saw four least terns flying over Wall lake June 19, 1916. Mrs. George May also reported it from Wall lake in the fall.

Black Tern (*Hydrochelidon nigra surinamensis*). Specimen in the Smith collection. The black tern is a common migrant both spring and fall and also a tolerably common breeder. They follow the plow for insects in the same manner that Franklin gulls do, but not as persistently. During the nesting season they do not range far from the marshes or lakes, but in the fall they range far over the surrounding country, often ranging over the hayfields to catch grasshoppers. They nest in the vicinity of Wall lake and on small marshy ponds between Lake View and Sac City. A colony of about fifty nested in the "Goosepond" the summer of 1915, judging from their remonstrance as I passed through it on the railroad track several times during July.

Quotation from Rudolph M. Anderson's "Birds of Iowa. '"Dr. J. A. Allen records, "great numbers, July 20, about Wall lake, in Sac Co. The young had already flown and were accompanying their parents." (Mem. Bost. Soc. i 1868, 502.)"' Mr. Lee also reports them as nesting.

Migration Data.

Spring.

Year.	First seen.	Became common.
1908—	May 15.	May 27
1909—	May 14.	May 14
1910—	May 13.	May 19
1911—	May 20.	
1912—	May 12.	May 14
1913—	May 11.	May 18
1914—	May 10.	May 10
1915—	May 9.	May 18

Double-crested Cormorant (*Phalacrocorax auritus auritus*). Reported by Mr. Smith as rare. A specimen in his collection. Reported by Mr. Lee as being called "black swan" and having the habit of staying in the middle of large lakes. He had seen none since 1894.

White Pelican (*Pelecanus erythrorhynchos*). Specimen in the

Smith collection. The pelican is a regular migrant, stopping on Wall lake to spend the night. It was common in early days, and large flocks are still seen in some years. Two pelicans, winged-tipped by hunters, were kept all summer at Lakewood resort on Wall lake about the year 1900. Mr. Lee and several others reported that seventy-five pelicans were killed by a hail storm in March or April, 1896, on a pond between Lake View and Sac City.

Merganser (*Mergus americanus*). Two specimens, a male and a female, in the Smith collection. The merganser is reported by Mr. Lee as being always rare. I identified a female on the inlet of Wall lake, May 9, 1915.

Red-breasted Merganser (*Mergus serrator*). One specimen, a female, in the Smith collection. Mrs. George May reported one seen in the "Goosepond" April 17, 1911. It must be classed as a rare migrant.

Hooded Merganser (*Lophodytes cucullatus*). A female specimen in Smith collection. It was reported rare by Mr. Smith.

Mallard (*Anas platyrhynchos*). Three specimens in the Smith collection. All the early settlers state that the mallard was a common breeder and abundant migrant. It is still one of the most common ducks, although greatly reduced in numbers, and breeds occasionally in secluded places. According to local hunters it nested in the "Goosepond" in 1915.

Black Duck (*Anas rubripes*). Mr. Lee reported killing a black duck in the spring of 1909, also that five were killed by another hunter the fall before.

Gadwall (*Chaulelasmus streperus*). Specimen in the Smith collection. Reported common by Mr. Lee. I found the remains of a gadwall, I think the remnants of a Cooper hawk's meal, April 21, 1913. I identified a male and two females on the inlet of Wall lake, April 2, 1916.

Baldpate (*Mareca americana*). Specimen in the Smith collection. Reported tolerably common by Mr. Lee. I saw about fifty on Wall lake March 15, 1914, and fifteen in the "Goosepond" April 16, 1916.

Green-winged Teal (*Nettion carolinense*). Two specimens in the Smith collection. Not as common as the blue-winged teal and migrates earlier, my first seen dates ranging from March 15 to April 4. Mr. Lee stated that the green-winged teal nested until about 1883, building their nests in the prairie grass well back from the water. He said that the nests were often exposed by prairie fires and that the females would return and try to hatch out the cooked eggs, often sitting for weeks. He stated that the blue-winged teal nested in similar locations.

Blue-winged Teal (*Querquedula discors*). Reported by all the early settlers as nesting abundantly, and as more common than the

green-winged teal. It is still the most common of nesting ducks, although in extremely small numbers as compared with early days. It nested commonly in the "Goosepond" in 1915.

Cinnamon Teal (*Querquedula cyanoptera*). I identified one among many other ducks in the "Goosepond" April 18, 1915. It was resting and preening its feathers on the top of a haystack bottom surrounded by water. I had ample opportunity to observe it through eight-power binoculars, getting all identification marks. Mrs. George May also reported it in the spring of 1911, and a local hunter in the fall of 1915, both observations in the "Goosepond." The hunter has a copy of Reed's Game Bird Guide.

Shoveller or Spoonbill (*Spatula clypeata*). Specimen in the Smith collection. In my experience this duck ranks next to the mallard in abundance. First seen dates range from April 3 to May 4. During the summer of 1915 it was numerous around the "Goosepond" and I presume nested there. Mr. Lee reports it as nesting commonly in early days.

Pintail (*Dafila acuta*). Three specimens in the Smith collection. This duck nested commonly in early days and Mr. Lee reports it as a rare breeder now. In 1908 the "Goosepond" was flooded and it remained until late in June. It is one of the earliest migrants. My first seen dates range from March 15 to April 24.

Wood Duck (*Aix sponsa*). Three specimens in the Smith collection. Very rare now. Mr. Lee reported it as next to the pintail in numbers breeding in early days and as still nesting in rare instances, nests having been reported in 1916. H. B. Hayden killed one on Wall lake in 1904.

Redhead (*Marila americana*). Specimen in the Smith collection. Reported by Mr. Smith as very common in early days, he having killed one hundred twenty-nine redheads to seven canvas-backs in the years 1876 to 1881. Mr. Lee reported it common. I saw many in the "Goosepond" April 7, 1912, and Mrs. George May reported it from the same place April 16, 1911.

Canvas-back (*Marila valisineria*). Specimen in the Smith collection. Both Mr. Lee and Mr. Smith stated that it was rare in early days. It appears to be increasing in numbers. Mrs. George May identified it in the "Goosepond" April 4, 1912. Local hunters reported it more common that year than for years. I found it common in the spring of 1915, keeping company with scaup ducks in the "Goosepond."

Greater Scaup (*Marila marila*). I presume it occurs, but I have never positively identified it and have no records.

Lesser Scaup (*Marila affinis*). Specimen in the Smith collection. Reported as breeding in early days by Mr. Lee. It is a common migrant now. My first seen dates range from March 28 to May 11. It often lingers till June.

Ring-necked Duck (*Marila collaris*). Specimen in the Smith collection. Reported common by Mr. Lee. He stated that a party of hunters at Wall lake killed one hundred twenty-five in 1904.

Buffle-head (*Charitonetta albeola*). Three specimens in the Smith collection. Reported common by Mr. Lee. I saw one in the "Goosepond" May 5, 1914.

Old-squaw Duck (*Harelda hyemalis*). One specimen, a male, in the Smith collection. Mr. Smith said that this was the only one he ever saw, and considered it very rare. No others reported it.

Ruddy Duck (*Erismatura jamaicensis*). Two specimens in the Smith collection. Mr. Lee reported it rare.

Lesser Snow Goose (*Chen hyperboreus hyperboreus*). Specimen in the Smith collection. They are rare migrants at the present day. Mr. Lee reported that snow geese were quite common in early days, he having seen acres covered with them. He stated that they never nested but stayed about a month in spring and were rare in fall. Both Mr. Smith and Mr. Lee said they were very poor eating as they never got fat. On April 3, 1914, I counted eight snow geese in a flock of blue geese, which had alighted in the cornfield back of our barn. On March 28, 1915, I saw seven snow geese in a large flock of blue geese. I called them lesser snow geese because they were approximately the same size as the blue geese.

Blue Goose (*Chen cærulescens*). Specimen in the Smith collection. Mr. Smith said that the one he had mounted was the only one he ever saw. Mr. Lee considered them rare, reporting about one hundred snow geese to one blue goose. In my experience this goose cannot be called rare at the present day. On April 2, 1914, about fifty blue geese and three snow geese alighted in a cornfield about one-half mile from our house. I took my binoculars and got close enough to see the rusty wash on their white heads and necks in addition to their blue bodies. The next day a larger flock of eight snow geese and one hundred sixty blue geese (I counted them, and they were so thick I missed a few) alighted and rested for some time on a bluegrass pasture. Later they alighted in a cornfield only about twenty rods from our barn, from which I watched them through my field glasses. On March 28, 1915, an enormous flock of blue geese came up the Boyer river valley from the southwest and after much preliminary circling they alighted in a dense mass about the center of the "Goosepond," where they remained until I left, or for over two hours. It was impossible to count them, but I estimated their number at two thousand or over. The flock contained seven snow geese. On April 2nd I again saw what I think was the same flock of blue geese, as there were seven snow geese in it. They were flying in immense circles high in the heavens, honking as they flew. Local

hunters reported the blue geese as present in the "Goosepond" in the spring of 1916. I did not see them as I was away from home, except for two brief visits.

White-fronted Goose (*Anser albifrons gambeli*). Both Mr. Lee and Mr. Smith reported this goose common in early days. Both stated that they were good eating as they got very fat. Mr. Lee stated that they were common in fall as well as in spring, coming about September 1st and staying until it froze up. They are tolerably common yet. I saw a small flock in the "Goosepond" March 28, 1915. Mrs. George May reported them in the same place April 14, 1911. Snow geese, blue geese, and white-fronted geese are all called brant by local hunters.

Canada Goose (*Branta canadensis canadensis*). Reported as common by both Mr. Smith and Mr. Lee, but not as common as its smaller subspecies. Mr. Lee said that the Canada goose was the only goose that ever nested in Sac county. He stated that in 1856 or 1857 a party of seven men captured a double wagon-box full of young Canada geese from one-half to two-thirds grown in a trip of about fifty miles, from Sac City up Cedar creek to Fonda, then west to Pond or Sunk grove, then to the Raccoon river and down it to Sac City. He also reported the last Canada goose nest at Correction pond in the year 1878, with perhaps some nesting at Rush lake in 1886 or '87. He further said that Canada geese are the least common of the three subspecies now, but that thousands of Canada geese stayed at Storm lake in Buena Vista county for a month in the spring of 1914. My father reported that Caanda geese nested in the "Goosepond" till 1878. Mrs. George May reported them in the "Goosepond" April 14, 1911, and I identified one April 18, 1913.

Hutchin's Goose (*Branta canadensis hutchinsi*). Reported by Mr. Lee as tolerably common both in early days and at the present time.

Cackling Goose (*Branta canadensis minima*). Mr. Lee reported that the cackling goose was more common than the Hutchin's in early days, and as more common than either Hutchin's or Canada at the present day.

Brant (*Branta bernicla glaucogastra*). Mrs. George May reported five seen in the "Goosepond" in the spring of 1911.

Whistling Swan (*Olor columbianus*). Specimen in the Smith collection. Mr. Smith reported them as tolerably common. My father stated that Mr. Oscar Draper shot two swans, weighing respectively, twenty-three and one-half and twenty-four pounds, out of a flock of eight or ten, in the "Goosepond" in 1875. Mr. Lee reported swans flying over in 1888 and 1889. A swan was seen on Wall lake by hunters in 1904. Local hunters reported that a flock

of about fifty swans stayed about the lower end of the "Goosepond" for some time in the spring of 1915.

Trumpeter Swan (*Olor buccinator*). Mr. Smith has a fine specimen in his collection, but reported them very rare. Mr. Lee said that he saw swans swimming in Rush lake in nesting season in 1873. Mr. Shelt Tiberghien reported the last swan nesting about 1870.

Bittern (*Botaurus lentiginosus*). These birds are common in all wet marshy sloughs of any extent. They are more common in migration, but considerable numbers remain throughout the summer in all suitable localities. I have first seen migration dates of April 13, 1913; May 3, 1914, and May 9, 1915.

Least Bittern (*Ixobrychus exilis*). Specimen in the Smith collection. I have found the least bittern rare, never having seen more than two in one day, and these usually in the fall. I have observed it both on Wall lake and in the "Goosepond."

Great Blue Heron (*Ardea herodias herodias*). This huge heron is a tolerably common migrant in the fall, somewhat rarer in spring. It is a rare breeder. In the spring of 1915 I saw five in the air over the "Goosepond" at the same instant. I have also seen it along the Coon river and about Wall lake. Mr. Lee stated that it now nests along the Coon river and that it was much more common in early days. A pair nested along the Boyer river or in the lower end of the "Goosepond" during the summer of 1915, according to the report of a local farmer, who saw them all summer and saw the young from the time they were able to fly until the hunting season opened.

Green Heron (*Butorides virescens virescens*). Two specimens in the Smith collection. The green heron is common along the Coon river. I saw it in the "Goosepond" in the spring of 1915, and also during the summer of 1916. During this summer I also saw it frequently along the Boyer river near by. I think it nests at all the places previously mentioned, and possibly at Wall lake, although it is not numerous at the lake, even during migration.

Black-crowned Night Heron (*Nycticorax nycticorax nævius*). Specimen in the Smith collection. Mr. Lee stated that these herons were common and nested at Sac City, but in most of the county it is a rare bird. It has been shot at Wall lake and at a pond north of the lake. I have seen one along Indian creek northwest of Lake View, and two were reported by a farmer boy along the Boyer river in 1914.

Whooping Crane (*Grus americana*). According to all early settlers the whooping crane was much rarer than the sandhill crane. My father stated that he had seen from one to ten in flocks of sandhill cranes, and that he had seen as high as forty in a flock

by themselves, both in the spring and fall. Mr. Shelt Tiberghien said that whooping or white cranes nested in northern Sac county until about the year 1869, and that the whooping cranes deserted this section as a breeding ground at the time that the railroad went through Newell. Mr. Lee reported none seen since 1895. My last record is March 24, 1904. Mr. Smith stated that he once secured a specimen for mounting which a neighbor had shot, but that it was temporarily left on a work bench, with its head hanging over so that the hogs could reach it, and they considered it good eating.

Sandhill Crane (*Grus mexicana*). Specimen in the Smith collection. Mr. Smith reported them very common. My father stated that a pair were seen about the farm all summer in 1875. Mr. Lee also reports them as common and breeding, two eggs being laid, with the last nest found about the year 1875. He hatched out two eggs from this nest under a goose, but could not raise the young cranes. He stated that the sandhills nested in sloughs, building their own mound for the nest and not using muskrat houses. Mr. Shelt Tiberghien reported them nesting also, with the last nest in 1878. I have found sandhill cranes only tolerably common to rare as migrants; also more common in spring than in fall. I have eight spring migration dates in the twelve years from 1904-1915, ranging from first seen on March 8th to April 10th, with the average on April 5th. I have never seen them alight save once, which was in a large pasture, in the fall. Their trumpeting can be frequently heard on spring nights as they pass overhead, although they also migrate by day. My father said that he once saw a flock of sandhills "dancing." They flopped their wings, kicked and hopped and circled about, but did not rise from the ground during the dance. Mr. Timmerman of Wall lake stated that when a boy in Franklin county he used to trap the sandhills in steel traps set in oat, wheat, or corn fields, but unless promptly secured the cranes would twist off their toes and escape. They were considered good eating.

King Rail (*Rallus elegans*). The king rail is a common breeder, nesting wherever there are suitable marshes. It is especially common in the "Goosepond" some years. I have seen the young rails there when they were about the size of young domestic chickens a few days old, and they were dead black in color. I have also seen the species about the inlet of Wall lake.

Virginia Rail (*Rallus virginianus*). Specimen in the Smith collection. I have found the Virginia rail very rare. I saw one in the "Goosepond" May 30, 1915, and one at Wall lake August 27, 1909.

Sora Rail (*Porzana carolina*). The sora rail is common in all

suitable marshy places, at least during migrations. I have picked up several dead soras which apparently had struck telephone wires or buildings during migration.

Florida Gallinule (*Gallinula galeata*). Very rare. I saw one in the "Goosepond" May 11, 1913. My father picked up a young gallinule which was lying dead by the roadside, August 17, 1908. Apparently it had flown into a telephone wire as the skin on its crown plate was broken.

Coot or Mudhen (*Fulica americana*). Specimen in the Smith collection. Very abundant during migration, especially at Wall lake and in the "Goosepond." It nests commonly in all suitable marshy places. My first seen dates range from April 3rd to 16th.

Wilson Phalarope (*Steganopus tricolor*). Specimen in the Smith collection. A rare migrant. I first identified it on May 9, 1909, in the "Goosepond," the one seen being an adult female. On September 3, 1911, I saw a young Wilson phalarope at the inlet of Wall lake. I saw an adult female in the "Goosepond" in the spring of 1916.

Avocet (*Recurvirostra americana*). Mr. Harry Colburn of Sac City killed twenty avocets along the Cedar creek in 1894. In the fall of 1914 I saw two birds along the inlet of Wall lake which must have been avocets, but they were so wary that I could not positively identify them, although they were very large shore birds with long legs, very loud call notes and a striking black and white color pattern.

Wilson Snipe (*Gallingo delicata*). Very common in suitable marshy places during migration. My spring migration dates range from April 4th to 23rd for first seen. I flushed one from a small springy creek November 28, 1915.

Long-billed Dowitcher (*Macrorhamphus griseus scolopaceus*). Very rare migrant. I first identified it in the "Goosepond" May 9, 1909, seeing one. I also saw one August 8, 1911, rowing my boat to within ten feet of where it probed the muddy shore of the inlet of Wall lake.

Stilt Sandpiper (*Micropalama himantopus*). A rare migrant. I saw two in the "Goosepond" May 23, 1915.

Pectoral Sandpiper (*Pisobia maculata*). An abundant spring migrant, common fall migrant, frequenting low wet pastures far from any open water, in the fall. My first seen dates in spring range from April 4th to May 4th and I have seen it in the fall from August 6th to September 8th.

Baird Sandpiper (*Pisobia bairdi*). A rare migrant which I have identified only once, on August 23, 1911, at the inlet of Wall lake. I watched that one through eight-power binoculars for fifteen minutes or more, at distances as close as ten feet.

Least Sandpiper (*Pisobia minutilla*). A common migrant, especially in the fall and about the inlet of Wall lake. It is less common in the "Goosepond" and marshy places. My first seen dates in fall range from August 2nd to 24th.

Red-backed Sandpiper (*Pelidna alpina sakhalina*). A rare migrant. I saw two males and one female in the "Goosepond" May 23, 1915.

Semipalmated Sandpiper (*Ereunetes pusilla*). A common migrant during the months of May, August and the first half of September, especially about the inlet. It is usually found in the company of least sandpipers and is not quite as common as that species.

Marbeled Godwit (*Limosa fedoa*). Specimen in the Smith collection. Mr. Lee reported them as formerly common and told of finding nests and eggs. Mr. Smith reported them as rare after 1875.

Hudsonian Godwit (*Limosa hæmastica*). Specimen in the Smith collection. Mr. Smith reported them as rare.

Greater Yellow-legs (*Totanus melanoleucus*). Two specimens in the Smith collection. A rare spring and fall migrant at the present time. I saw one August 24, 1914, and one in the spring of 1916.

Lesser Yellow-legs (*Totanus flavipes*). A common migrant both spring and fall, about the inlet of Wall lake and the "Goosepond." My first seen dates in spring range from April 18th to May 12th; in the fall, August 4th is the earliest date.

Solitary Sandpiper (*Helodramas solitarius solitarius*). A tolerably common migrant both in spring and fall. It is more frequently found along the small creeks and streams, one or two individuals in a place, than about the larger marshes or the lake. My first seen dates in spring are from May 18th to 23rd. In the fall it comes early in August and remains as late as the second week in October.

Willet (*Catoptrophorus semipalmatus semipalmatus*). A very rare migrant. I identified one in the "Goosepond" May 30, 1915.

Upland Plover (*Bartramia longicuda*). Tolerably common spring and fall migrant at present. Mr. Lee reported it as formerly common and breeding, the last nest he knew of being about 1890. Mr. Smith reported it as nesting in timothy fields and so shy that it had to be hunted by driving up to it with a team. I can remember of a nest in our pasture, which must have been about 1898.

Spotted Sandpiper (*Actitis macularius*). Only tolerably common along the sandy shores of Wall lake and along the Coon river. I know it as a migrant only.

Long-billed Curlew (*Numenius americanus*). Specimen in the Smith collection. Mr. Smith said they were rare after he came in 1876. Mr. Lee reported seeing none of late years, but that formerly they were common and nested, the last nest about 1885.

Golden Plover (*Charadrius dominicus dominicus*). Mr. Smith said, "There were countless thousands of them running over the burned-over prairies in the spring of 1876." Mr. Lee reported that in early days Indian creek used to be a flightway for golden plover. He stated that during the spring migration a bushel basket-full could be shot there in an hour. He also reported seeing four golden plover in Buena Vista county in the fall of 1916. Dr. Speaker of Lake View reported one killed near Wall lake about 1910.

Killdeer (*Oxyechus vociferus*). Tolerably common as a migrant and tolerably common as a breeding species. I once found a nest in my cornfield over three-fourths of a mile from the nearest water. It is one of the earliest migrants, my first seen dates ranging from March 11th in 1908 and 1911 to April 3rd in 1915.

Semipalmated Plover (*Ægialitis semipalmata*). A common fall migrant, especially at the inlet of Wall lake, but rare as a spring migrant in my experience. I have seen it only once in spring, June 9, 1916, along Boyer river west of the "Goosepond."

Bob-white or Quail (*Colinus virginianus virginianus*). Two specimens in the Smith collection. The bob-white is very rare in all the prairie portions of the county at he present time. The few that are found live mostly along the edges of the timber along the Coon river. Mr. Lee reported bob-whites very scarce in 1854. Mr. Tiberghien reported that bob-whites were most numerous in 1866. Mr. Platt Armstrong of Lake View reported a few bob-whites in a patch of brush on Indian creek in 1878. The bob-whites do not thrive in the prairie portions of the county because, even if the hunters spare them, every four or five years there comes a sleet storm in winter which reduces them to the verge of extinction.

Ruffed Grouse (*Bonasa umbellus umbellus*). Extinct in the county at the present day. Mr. Lee said he saw the last one in 1886, and had seen a few others before that. Mr. Hugh Cory reported ruffed grouse rare, the last he saw being in the 1860's.

Prairie Chicken (*Tympanuchus americanus americanus*). Three specimens in the Smith collection. The status of the prairie chicken has been changed several times in Sac county. Mr. Tiberghien reported that the prairies chickens were common at the time of the earliest settlements, but that they migrated south in winter. He said that in the winter of 1855-56 fifteen chickens tried to remain and only seven of them survived. All the other chickens had migrated south, and returning the next spring were very abundant the succeeding summer and fall, nesting in great numbers on the prairie. These migrations giving *absence* in winter continued until about 1875 to 1880, when corn became a common crop. The prairie chickens then both nested and wintered abundantly. Many farmers trapped them in coop traps during the winter, some of

them drying the meat of the breasts for summer use. One albino prairie chicken attained quite a local reputation in the southern half of the county because it could never be trapped, and all the hunters made it a point to spare the "White Chicken." This period continued until about 1895, by which time the county became so thickly settled that only a few prairie chickens could find places to nest. From this time on they have been common in winter, coming in from the Dakotas or Minnesota, wintering in the stalk fields or about the fields of shocked fodder, and in the spring returning whence they came to nest. This condition continues at present, with the exception of a few remaining to breed. From 1900 to 1913 I have no knowledge, nor can I find any record of a prairie chicken nesting in Sac county. Mr. Lee reported one pair nesting in the northern part of the county in 1913 and several pairs in 1914. In 1915 one pair nested a few miles from Wall lake. I saw the brood in July when the young were about the size of bob-whites.

Prairie Sharp-tailed Grouse (*Pediœcetes phasianellus campestris*). Mr. Hugh Cory said that he trapped about one hundred of these birds in the winter of 1855-56. He stated that he saw them last in the 1850's, and that they were much rarer than prairie chickens. Mr. Tiberghien also reported them rare, with the last seen in 1858.

Wild Turkey (*Meleagris gallopavo silvestris*). Both Mr. Cory and Mr. Tiberghien reported three killed at Grant City in 1854. This is the only record for the county.

Passenger pigeon (*Ectopistes migratorius*). Mr. Tiberghien said that he had seen flocks of five hundred in buckwheat fields in the fall. The last one he shot was in September, 1879. My father saw one near the "Goosepond" in the summer of 1875, and a flock of about twenty nested in the young grove about the home place one mile north of Wall lake one spring between 1880 and 1885.

Mourning Dove (*Zenaidura macroura carolinensis*). Common to abundant at times. The early settlers reported it as present at first settlement, but as much rarer than now. Since doves are very wisely protected at all times by state law they also are increasing in numbers. An occasional one spends the winter here. In the winter of 1907-08 a flock which numbered twenty on December 22nd were tempted to winter by an abundant supply of shelled popcorn, which was scattered on the ground in a thirty-acre field which had been husked with a corn picking machine. About the middle of January snow covered up most of the food supply and on February 4th only three doves were left. I saw one of these start south one evening about sunset. Zero temperatures succeeded, yet in spite of the cold one dove remained about the farm

buildings on February 29th. As migrants arrived on March 10th I think it survived. My first seen dates range from the date given to April 11th. The dove usually nests in groves about farm houses, but I once found a nest on the ground in a clover field. From the latter part of July until the doves depart on their fall migration in late October they select common roosting places, one of which happens to be our orchard. Toward sunset the doves visit some place to drink and then fly to the roosting place from all directions until between five and six hundred are roosting there. They depart again just as it becomes light in the morning, spending the day far away in pastures and grain fields. During the month of August they may be commonly found about salt troughs for cattle, seeming to eat the salt. In late October the numbers coming to the roost gradually become fewer, until none come in on whistling wings at sunset.

Turkey Vulture (*Cathartes aura septentrionalis*). Mr. Lee reported that vultures used to be very common. The last nest he saw was in 1875, and the last bird about 1910. Mrs. E. B. Hayden said that vultures or buzzards were common along the Coon river. Mr. Joe Abernathy reported two seen near Sac City in the spring of 1915.

Swallow-tailed Kite (*Elanoides forficatus*). A specimen taken in Ida county, which adjoins Sac on the west, is in the Smith collection. Mr. Lee reported the swallow-tail kite as rare, with the last one seen in 1908. Mr. Tiberghien also reported it as rare.

Marsh Hawk (*Circus hudsonius*). Specimen in the Smith collection. This species is a tolerably common breeder in suitable sloughs. I know of three sloughs within a few miles of Wall lake, where it breeds regularly. It does not nest in the "Goosepond," probably owing to the fluctuating water level. I think it occasionally winters, as I have seen it on Christmas day and early in February. First dates of arrival, other than February, are from March 29th to April 20th.

Sharp-shinned Hawk (*Accipiter velox*). Specimen in the Smith collection. A rare spring and fall migrant, with more observed in the spring than in the fall. I know of no breeding records, although they may nest in the timber along the Coon river.

Cooper Hawk (*Accipiter cooperi*). A rare spring and fall migrant. I have seen about five individuals all told. It may nest in the timber along the Coon river.

Red-tailed Hawk (*Buteo borealis borealis*). A rare spring migrant in the vicinity of Wall lake, but some years a common fall migrant in the month of October. My first seen dates in spring are March 3rd and 6th. I have no record of its nesting.

Western Red-tailed Hawk (*Buteo borealis calurus*). A rare fall

and winter visitant. One stayed nearly all winter several years ago.

Krider Hawk (*Buteo borealis krideri*). On March 25, 1914, I identified this subspecies. Its tail had the lighter colored portions almost white.

Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*). Specimen in the Smith collection.

Golden Eagle (*Aquila chrysaetos*). Specimen in the Smith collection, but which was taken in Ida county.

Bald Eagle (*Haliœetus leucocephalus leucocephalus*). A specimen in the Smith collection which was taken in Crawford county. Mr. Lee said, "Bald eagles used to nest, the last nest being in 1871, at Brown's grove, near the north line of the county in Delaware township. They were always rare, six in one day being the highest usual record, but forty-two were seen in one tree about 1868."

Duck Hawk (*Falco peregrinus anatum*). I saw one of these hawks in the "Goosepond" April 16, 1916, obtaining a good look at it.

Pigeon Hawk (*Falco columbarius columbarius*). Mrs. George May reported seeing two, which she had under close observation for some time, near Herring, in the spring of 1911.

Sparrow Hawk (*Falco sparverius sparverius*). Specimen in the Smith collection. A rare migrant and still rarer as a nesting species. Dates of first arrival are from March 24th to April 23rd. A few miles south of Odebolt I saw four young only recently from the nest and attended by the parents, July 28, 1913. On June 6, 1916, I found a pair nesting in the south Chicago & Northwestern railroad bridge over the Boyer river. The nest was placed back in the top of the high wooden structure, so I could not see the young, but I could hear them calling, while the old bird swooped about my head crying, "killy," "killy."

Osprey (*Pandion haliœtus carolinensis*). Mr. Lee said that the osprey was only tolerably common, but that they were seen every spring. I saw two at Wall lake May 14, 1916.

Barn Owl (*Aluco pratincola*). Specimen in the Smith collection. Mr. Smith stated that this was the only one he ever saw.

Long-eared Owl (*Asio wilsonianus*). Specimen in the Smith collection. It is of rare occurrence. I identified one October 20, 1908, and have seen only two since. It is probably more common in the timber along the Coon river.

Short-eared Owl (*Asio flammeus*). Specimen in the Smith collection. This species is a rare breeder and at times an abundant winter resident. One February afternoon I counted seventeen flying about over the snow-covered earth, searching for meadow mice. A pair usually nest in every fair sized patch of slough grass. I saw a pair in the "Goosepond" several evenings in the summer

of 1916. I have examined numerous pellets thrown up by this species and have almost always found from one to three meadow mouse skulls in each pellet.

Barred Owl (*Strix varia varia*). Mr. Lee said that barred owls were always rare and that they are still found occasionally.

Screech Owl (*Otus asio asio*). The screech owl is a common resident the year round. Nearly every farmer's grove has its pair of screech owls, and the towns are also well supplied, as anyone who knows their call can readily testify. At my home farm a pair have nested in an artificial house, with an entrance three inches in diameter, and with ground cork in the bottom, for several years. The female has become so accustomed to people that at the time the young leave the nest she is very bold. One evening when I was picking cherries she swooped down from behind and struck me on the head. In rare instances I have heard them "screech" in broad daylight. They are proficient catchers of English sparrows and mice. In the bitter cold winter of 1914-15 a screech owl injured one eye so that it could not see from it. I found it in the barn hay loft and also a partly eaten pigeon, which was frozen, and which I removed. The next day the owl was still there, also there was another partly eaten frozen pigeon. The owl died that night and there were no more dead pigeons.

Great Horned Owl (*Bubo virginianus virginianus*). Mr. Lee stated that the great horned owls were common in the early days, but are rare now.

Snowy Owl (*Nyctea nyctea*). Three specimens in the Smith collection. In occasional very severe winters the snowy owl comes as far south as Sac county, but it is always rare. I have never seen one alive.

Burrowing Owl (*Speotyto cunicularia hypogœa*). Mr. Lee reported burrowing owls as common and nesting. I have found them only tolerably common. My first identification was September 16, 1907, on our home farm. I have found them breeding in the following localities: About four miles north of Lake View, two miles south of Wall lake, and five miles southwest of Wall lake on the hills bordering the Boyer river flood plain. Mrs. George May also reported these owls from this locality April 15, 1911. In the summer of 1916 I saw two broods of four owlets each, sitting at the mouths of their burrows in the evening, a few days before they started to fly. At this stage the adults are very angry should a person or dog appear near the burrow, and swoop toward the intruder, snapping their bills and uttering loud cries. The pellets at the mouth of the burrow seemed to consist chiefly of beetle wings from various species, with the fur and skull of an occasional mouse.

GENERAL NOTES

NOTES FROM LAKE COUNTY.

Piping Plover Breeding.—My first spring record for this species was made on May 25 of this year, and my previous fall records having been mighty few, I was well pleased when visiting the place again on the 27th and 30th to find two birds about, and wondered if they would possibly stay and breed. Then I made the mistake of forgetting all about them until Mr. E. W. Hadeler informed me on July 5th that he had seen a Piping Plover that day on the beach. I lost no time in visiting the place the next day and found a pair of the birds, whose actions clearly indicated either eggs or young. A few minutes' search and I was lucky enough to find a downy young just old enough to run about. When first discovered it was squatted on the sand, with head flat down, and I rubbed the little crown with my finger without getting even a quiver out of him. The female meanwhile was doing the wounded bird stunt to perfection. Not wishing to cause too much disturbance I soon left, and as soon as I started off the little fellow ran for shelter. A few days later Mr. H. visited the place again, seeing three young in all, now able to run about swiftly.

Savanna Sparrow Breeding.—While hunting a swampy meadow on July 8, trying to outwit a pair of Bartram Sandpipers that apparently had a nest there, I flushed a Sparrow from under my feet, and upon looking into the nest beneath a buttercup was struck with the heavy and unusual coloration of the three eggs it contained. They were so different from all the Song and Vesper Sparrow eggs I have seen that I thought it worth while to identify the bird. I followed her about the field a while, and in doing so, flushed another bird from her nest which also contained three eggs. Before I left I obtained excellent views of both birds and heard a male sing his wheezy song several times. The day was cloudy and the grass wet, and both birds flushed almost from under my feet and lit but a short distance away. I visited the nests again the next day and found one of the males singing from a nearby fence-post, but he flew far on too close an approach. The song reminded me of a Grasshopper Sparrow trying to sing a Song Sparrow song. The females acted different in leaving the nest this time. Though I approached as before they sneaked off mouse-like for some little distance, then flew far in their characteristic swift flight. Both nests were in a low part of the meadow beneath buttercups, their rims flush with the ground. This is my first knowledge of the Savanna Sparrow otherwise than that of a spring and fall migrant.

Purple Finch as a Summer Resident.—During the latter part of

June and up until the present time (July 11) I have had a singing male under observation, but have not been able to locate any nest as yet. He is in full adult plumage.

RUSTY BLACK-BIRD.—The unusually cold wet spring that kept the Warblers here into June and gave me late May records for such birds as Kinglets, Brown Creeper and Junco also was the probable cause of a May 25th record for a singing male Rusty Blackbird weeks after they had apparently all moved on. An unusual alarm note aroused my curiosity, and I looked around to see the Rusty, who finally came flying towards me to alight near by in a willow and sing his "gor-whillier" notes several times as though they also were needed to satisfy me. The bird was not wounded in any manner that I could see.

RECORD FOR STILT SANDPIPER.—Visiting a flood pond along the beach on July 29, 1917, I found its shores to contain some fifty odd shore birds of various species, among which was one that immediately drew my attention by its peculiar actions. Before I could get a good view, however, the whole bunch flushed, the smaller Sandpipers going in one direction and the Killdeer and the unnamed one in another. An hour later I again found the Killdeer and this bird at the head of the pond and had ample opportunity to observe it and identify my first Stilt Sandpiper. It may be worthy of note that it staid with the Killdeer, while all the others kept in a separate flock which contained twenty-two Sanderling, several Spotted Sandpiper, three Semipalmated Sandpiper and two Semipalmated Plover. The peculiar actions mentioned were its manner of feeding. While all the rest were standing or moving leisurely about the muddy edges of the pond, the Stilt kept running rapidly about in most erratic circles and twistings and capturing just as they left the ground the insects that he flushed; each capture being attended by a dip of the body and a sinuous scoop of the neck, which made the whole performance very striking. And every few moments he would suddenly stop dead still and stretch up his neck to the limit to see if all was well. This action made the bird appear a very long-necked Sandpiper rather than a very long-legged one. I do not mean to say, however, that this is the usual manner of feeding with the Stilt Sandpiper, but it answered the purpose in this instance and was kept up all the time the bird was under observation. Probably an immature bird, as the legs were yellow, the underparts very light, and the tail white in flight. The slenderness of the rather long bill made a noticeable field mark.

RECORD FOR WESTERN WILLET.—Visiting the same pond on August 12 I found it occupied by several Killdeer, one Least Sandpiper, two Lesser Yellow-legs, one Black-bellied Plover and a big stranger;

while just over a sand ridge, on the beach, were Spotted Sandpipers, Sanderling, Semipalmated Plover, and a Turnstone. The big fellow was easily identified a little later as a Western Willet and proved the least timid of the lot, remaining after all the rest had flown, and running about in the shallow water. This was seemingly done to startle his food into action so as to effect its capture. Several large pollywogs, which he had drawn into shallow water, were not taken, however, but seemed greatly to arouse his curiosity. The bird had to be purposely flushed in order to see the attractive wing pattern, but he returned immediately, and I flushed him suddenly again to hear his call, and succeeded. Later in the day I found him unconsciously hunting the beach within a few hundred feet of a large gathering of bathers.

E. A. Doolittle.

Painesville, Ohio.

SUMMER RECORDS FOR 1917.

In northwestern Iowa weather conditions throughout April and May were exceedingly unfavorable for seeing migrating bird. Similar conditions in 1915 were followed by like results, making the records for these months the poorest in a dozen years. In both years the birds were halted somewhere south of my station, and when their journey was resumed most of them hurried northward without stopping.

After a spring lacking in usual interests there has followed a summer in which the birds have been more plentiful than any year since 1910. This statement is based upon records of the species seen daily in my own dooryard and its immediate neighborhood, where forty-two species are known to have nested within recent years. Some of these, such as the Sora, Western Meadowlark, Grasshopper Sparrow and Chickadee are infrequent breeding birds, the Cliff Swallow and Purple Martin are summer residents of the past, the Blue Jay has become scarce, and of late the Sparrow Hawk and Screech Owl are discouraged in every possible way from nesting.

For June and July, and for August to date (which is the 25th), the daily average of species seen has been twenty-three, the highest number for any day being thirty-two, and the lowest thirteen. The total number of species seen in these months on our place and its near neighborhood is sixty, which is exactly two-thirds of the number seen here this year. All but three of the breeding species have been present, and in addition there have been twenty-one visiting species. In size the variation has been great, ranging from that of the Ruby-throated Hummingbird to that of the immature

Bald Eagle. This Eagle caller, when departing, was chased by a Marsh Hawk, and the immense spread of its wings could thus be compared with that of the Hawk. Their proportional sizes were to each other about as those of Crow to Kingbird, and their behavior was decidedly similar.

Seeing and hearing daily within hailing distance of ones doorstep an average of twenty-three species of birds is a privilege not to be despised, neither are the thrills that come when rare visitors appear quite unexpectedly: to step outside to find a non-reporting Chipping Sparrow and see a Great Blue Heron flying overhead, or to go a little farther in search of a Short-billed Marsh Wren and find instead a Bald Eagle gives zest to the roll calling. But the best part is to see the recruited numbers of some species that have been sadly missed of late. This is especially true of the Bobolink, that joyous rollicking songster which had almost disappeared from fields and orchards for a few years. The Dickcissel, entirely wanting last year, has been present in moderate numbers, and the Grasshopper Sparrow, always scarce, has been with us again. The Mourning Dove seems to be prospering as never before. Perhaps prosperity has made it more generous in revealing its nest secrets, at all events some unsuspected features have been displayed. The seventh nest of this species that has been found on our place in 1917 is now in progress. The Maryland Yellowthroat apparently was driven away by House Wrens, whose numbers have increased unduly. When such an increase happened among the Flickers a few years ago some very curious things took place by which further increase was checked and the species has now been reduced to normal numbers. It will be a matter of interest to note, if anything of like nature occurs among the Wrens, though it seems extremely unlikely.

Species whose summer residence with us is short are staying in more than usual numbers; since they came late in the spring it is possible they do not intend to cut short their northern sojourn. No Warblers from the north have been seen, though it is now time for first arrivals.

ALTHEA R. SHERMAN.

National, Iowa.

WEIGHT OF AN EAGLE'S BRAIN.

Recently Mr. Wirt W. Hallam, Secretary of the Chicago Vigilance Association, desired to secure information showing the relative brain capacity of a domestic fowl and of an eagle. Inquiry of various ornithologists failed to bring him the information, and he was compelled to secure the data himself. He secured a male

Golden Eagle through a taxidermist in Chicago, and made similar measurements upon it and a Plymouth Rock hen.

The facts obtained are as follows::

Eagle.	*Chicken.*
10 pounds—Weight of entire bird	7½ pounds
7 ft. 1 in.—Extent, tip to tip of wings	28 inches
39 inches—Length of each wing	12 inches
16 inches—Width of each wing	8 inches
36 inches—Length of entire bird	24 inches
185 grains—Weight of brain	55 grains

PRAIRIE HORNED LARKS FROZEN IN ICE.

In February, 1914, near Westfield, Iowa, I found seven Prairie Horned Larks frozen in the ice in the ruts of a country road. The ice was thin and easily broken, and as the birds were still alive they were quickly released and allowed to fly away, apparently not seriously injured. Most of the birds were held by both feet, but one or two were fastened by only one foot. Feathers could also be seen frozen in the ice. These feathers may have been whipped out in the efforts of the birds to escape, or some may have been frozen in at the same time the feet were frozen in.

We cannot be altogether certain how the birds came to be thus imprisoned in this peculiar manner. But it seems to me most likely that the birds found the deep ruts a good shelter and roosted there through the night. It is not easy to believe, however, that they would deliberately stand in water, and we may have to suppose that some thawing occurred during the forepart of the night, and that the temperature later fell to the freezing point.

Claudius Pike.

SOME NOTES FROM ST. MARKS, FLORIDA.

Petrochelidon lunifrons lunifrons—Cliff Swallow. May 10, 1917, five flew over the river, feeding for some minutes. This is the only spring record I find.

Porzana carolina—Sora. May 8, 1917, four were seen feeding on an open marsh. All showed the bright yellow coloring to bill, indicative of approaching breeding season. May 14, 1916, a single bird was seen. These dates seem late, but I have no idea they remained here for nesting.

Haliœetus l. leucocephalus—Bald Eagle. December 11, 1916, a single egg, that proved incubation almost finished, was taken from a nest. This egg was probably deposited about November 20.

Compephilus principalis—Ivory-billed Woodpecker. I recently saw a female of this rare bird in the flesh that had been taken

down the coast—not in this county, however. A male was seen in the same locality in early May, 1917.

JOHN WILLIAMS.

ANOTHER NEW BIRD FOR OHIO.

Buckeye Lake, Licking County, has furnished Ohio with several rare records of birds. Mr. Edward S. Thomas, of Columbus, found two Surf Scoters (*Oidemia perspicilla*) there in company with scaup ducks, on April 28, 1917. It has been supposed that this scoter would be found on Lake Erie at some time, but this interior artificial body of water seems to have furnished a greater attraction. L. J.

A SEASON OF ABUNDANCE OF BIRDS IN CENTRAL OHIO.

Mrs. R. O. Ryder, Columbus, in reporting the work of the bird students of that city, states that rarely if ever has there been such an abundant visitation of the migrating birds as during the spring migration period of 1917, especially during late April and May. Among the many species of Warblers, the Kirtland's was seen on May 21, 22, and 23. It permitted an inspection at close range. Other usually rare warblers were Prairie, Sycamore, and Connecticut, several individuals of each. Other rare birds recorded in some numbers were Yellow-bellied Flycatcher, Philadelphia Vireo, Orange-crowned Warbler, Lincoln and Bachman's Sparrows. The record of 200 species seen up to the first of June, for that inland region, is proof that there must have been a halt of many species during the severe weather, which cheated the northern counties of their usual quota of migrating species of warblers and sparrows. L. J.

PUBLICATIONS REVIEWED

The Winter Bird Life of Minnesota. By Thomas S. Roberts. Published as Occasional Paper: No. 1, of the Zoölogical Division of the Geological and Natural History Survey of Minnesota. February, 1916. With a full page colored plate of the male and female Evening Grosbeak. Published also, without the colored plate, in "Fins, Feathers and Fur," for December, 1915.

We have here a very complete list of the birds which have been authentically recorded as winter birds within the State. The list includes eighty-five species and five subspecies, and they are listed in four groups, as follows:

Permanent residents, 32 species, 3 subspecies.

Winter visitants, 16 species, 1 subspecies.

"Half hardy," 10 species, 1 subspecies.

Accidental, 27 species.

Forty-one are marked as common in the vicinity of St. Paul and Minneapolis. Copious annotations accompany each species referring to their differential characters, status, etc. Notwithstanding the long list, it seems to have been very conservatively compiled; and in all unusual records data as to time and place are offered—in most cases the observer is also named. This list will be of considerable value to students in the adjacent states as well.

T. C. Stephens.

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A DAY WITH THE BIRDS OF A HOOSIER SWAMP.

By Barton Warren Evermann.

Have you ever realized how interesting a small swamp may prove to any one who takes the trouble to look at it? Or what a fascinating story it has for him who makes friends with it and tries to learn its secrets?

I fear you never have. Not because you would not like to know, but perhaps because no one has ever tried to interest you in swamps. Most people look upon a swamp merely as a useless, unproductive piece of ground where snakes and mosquitoes and frogs abound; where horses and cattle mire; where one gets wet and covered with vile-smelling mud should he venture therein.

This is what those think and say who do not really know swamps; who view them with prejudiced eye. But let us take a trip to one of our small Hoosier swamps and try to learn its ways. There are thousands of them in the state, all much alike in many respects, yet each possessing peculiarities, a personality I may say, of its own. Let us go to the old Maple Swamp.

Flowing westward through the southern part of Carroll County, Indiana, is a small creek called Middle Fork. Not far from where it is crossed by the Vandalia Railroad it widens out very much, almost losing its identity. Its banks are ill-defined. There is no definite channel, or else the chan-

nel changes from time to time. The country on either side is level and low, and the water from the stream spreads out and the stream dissipates itself among the bushes and trees. A large slough is formed over which the water varies in depth from a few inches to 2 or 3 feet, and the ground is very soft and muddy indeed. Along the border is a fringe of small bushes and vines, and a few oaks, nearly all of which lean inward toward the swamp. Inside this fringe of bushes is a border of marsh-grass and button-bushes. Then come cattails (*Typha*), tall water-weeds (*Scirpus*), and water-lilies. Lower down is a dense growth of underbrush and a pretty heavy forest of swamp ash, soft maple, and willows. The yellow pond lily is abundant, growing in the more open shallow places where the bottom is of soft, black mud. Patches of Iris or blue flag are seen here and there. In one place, where there are springs in the bottom and the water is cold, is a patch of that most magnificent of Indiana wild flowers, the beautiful showy Lady's slipper (*Cypripedium reginæ*).

We drive to the swamp on a pleasant morning in late May (21st). We put our horses in the barn of a farmer who kindly permits us to do so. We change our clothes for older suits, suitable for wading.

The Great Blue Heron, or "Big Blue Crane," is said to nest in this swamp. "Why," said the man who first told us about it, and who had seen the place in winter, "the nests in the tree-tops look like small haycocks! I saw them plainly as I drove by in my sleigh. I counted over a hundred of them." So we are impatient to see if the nests are occupied this spring. We begin wading out into the marsh. The water is very cold and, as if to add to our unpleasant sensations, the bottom is very uneven, and we often suddenly step into holes deeper than any before; our feet become entangled and we fall headlong into the water. And now we find areas of quicksand into which we are kept from sinking only by catching hold of some prostrate log or nearby limb. Hardly have we entered the swamp when a Great Blue Heron is seen coming from the north. He is high in the air, and approaches

the swamp with long, steady strokes of his mighty wings. But as he nears the margin of the forest he suddenly stretches his neck and legs to their full length, and in a right line, partially closes his wings and swoops down with a whirring noise in a direct line for the top of a large ash, in which is his nest. We have often watched hawks and crows and buzzards descend from heights in this way, but never before have we seen so *long* a bird as a Great Blue Heron perform the feat, so let us watch him closely. How long he is and how graceful and like an aeroplane he glides in descending flight! But see! When within a few yards of the nest he suddenly doubles up his long neck close against his breast, lets fall his legs in a very awkward, dangling manner, spreads his wings and beats the air with a few well-timed strokes until he finally clutches the limb on which he wishes to alight.

During the day we witness the return of many others. They all come from the north. Their fishing grounds are probably on Wildcat Creek, some five or six miles to the northward. In every case the descent is made in essentially the same manner, and each is received with loud croakings by those at home.

But soon all become quiet, except an occasional malcontent who, seemingly not satisfied with his lot, gives evidence of his discontent in spirited quarrelings with those about him. Now the return of another bird puts all in confusion again.

Let us wade about among the trees and estimate the number of nests they contain. It is easy to count at least 130 of them; and there are probably several more. Some trees have but a single nest, but usually there are several in each. And here are twelve in one tall ash, all in use.

These maples and ash are quite tall and without limbs for the first thirty to sixty feet, and as we have no climbing irons we shall not be able to reach many of the nests. But with the aid of a long rope we succeeded in getting to a few. To one end of the rope we tie a long, light but stout string, to the end of which we tie a weight of convenient size. This we throw over a limb of the tree we wish to climb. Taking

hold of the end of the cord that hangs over the limb, the rope is drawn up until it hangs to the ground in a long loop. One now has no difficulty ascending even very large and tall trees, if he makes use of both the rope and the tree. One of us climbs this large maple. There are eleven nests in it, but most of them so far out on the limbs that we dare not venture out to them, so we must be content to stand in the main-top and look down into the nests with their thirty beautiful light green eggs. The usual number to the nest seems to be three, though there are several with only two each, and a few with four as the full nest complement. Not more than four were found in any nest. There are some empty nests and several containing young birds of varying ages,—some just hatched, others large and lusty youngsters, almost ready to fly. Indeed, one large fellow is standing bolt upright on the edge of the nest, and as I attempt to reach him, in trying to fly to another limb, he falls to the ground, a good hundred feet below, his life paying the penalty for his rashness.

But we must not devote the entire day to the herons; the swamp has many other objects well worth seeing. There are other birds that make this their summer home. Here among the button-bushes and the patches of Scirpus we find the curious well-built nests of the Red-wing Blackbird,—America's starling. These nests are seen on all sides woven among and hanging in the tall rushes or resting in the crotches of low bushes. The Crow Blackbird, next to the Heron, is the most numerous and noisy bird of the place. Their nests are of mud and grass and small sticks placed in large knot-holes, on top of broken-off snags, in forks of trees, and even in deserted woodpecker holes. We see these nests at all sorts of distances from the ground; here is one on the top of a small rotting stump only three feet above the water, while there is one fully sixty feet high in the fork of that dead maple.

The breeding season is nearly over with the Crow Blackbird, for only young birds are seen in the nests, which nearly all seem about ready to leave.

See that bird flitting across the open space like a flame! It is the American Redstart, one of the daintiest of our birds. Here is its nest in this small elm. It is only six feet above the ground. By standing on this old log we can look down into the nest without disturbing it. How beautifully fluffy its little nest of delicate fibres, moss and feathers is! And how delicately fine are the three little eggs it contains!

A Maryland Yellow-throat flies scolding athwart our course and hides in the clump of grass at the edge of the marsh. From its excited scoldings we know its nest is there, though we are not able to find it.

In the thickets and hawthorns on the banks we find doves, catbirds, brown thrashers, and yellow-breasted chats living together and rearing their young in peace and contentment. And with what a thrill of excitement and delight do we discover that this swamp is a breeding place of the Golden Swamp Warbler, the most beautiful of all our summer birds. We catch a glimpse of a bright-colored bird as it flies from a hole in a small dead snag not far away and disappears in a thicket nearby. We have not long to wait, for the little bird, solicitous for its treasures which must be in the nest in the old snag, soon returns. By short flights and with much anxiety it approaches the nest, and we see it is the Golden Swamp Warbler. We learn that the nest contains five beautiful fresh eggs, and later in the day we find several other nests, none of which we molest. They are all in deserted sapsucker holes, or similar holes, in small dead snags or trees from four to ten feet up.

In another part of the swamp we find several of these little birds not yet mated. The pairing season is on, and the birds are in active courtship. Many a combat between rival males do we see. Near the center of the breeding ground is an acre of comparatively open space, a pond in fact, covered with a thick growth of water-lilies. As we stand near the edge of this pond a couple of males dart by us across the open space, then circle about the pond, the one in close pursuit of the other. Often they cross and re-cross the open

water, circle around its margin, then dart off through the trees and disappear from view, only to return again after a time and repeat the same wild race. Some times the one is not a coward, but stands his ground; then a fierce conflict occurs; frequently they clinch and fall nearly to the water before letting loose. Now they ascend in a spiral flight far up among the tops of the trees, only to return promptly to the pond again. Now they have separated and one of them flies alone in a slow fluttering way across the open space toward the old snag in which the female is building the nest. With wings bent downward, and tail spread so as to show plainly the white of the outer feathers, he gives expression to his happiness in an excited but pleasing little song, which I wish I could describe. Now he perches upon a limb just above my head, where, with drooping, tremulous wings, and head erect, he warbles very prettily his delicate little love song, oblivious of us all except of her who is busy at the old willow snag. Although she seems very busy indeed, she doubtless hears the little song and knows full well its subtle meaning.

These are but a few of the interesting birds that may be seen in and about this fine old Maple Swamp. There are red-eyed vireos, warbling vireos, wood pewees, Baltimore orioles, turtle doves, scarlet tanagers, and many others, but these we must leave until another day.

And now, as we start home in the gloaming, the Great Blue Herons are returning in larger numbers from their feeding grounds along Wild Cat Creek and Deer Creek to the north, and perhaps even from the Wabash to the northwest; the Crow Blackbirds and Redwings come flocking in from the nearby fields and marshes. A Brown Thrasher, perched upon the topmost limb of a tall sassafras in the corner of a field, sings to us as we pass by; while from the hillside across the swamp comes the strange, doleful song of the Whip-poor-will.

The pleasures of the day were not all from the swamp and its denizens. The woods, the fields, the air and all out-doors conspired to entertain us and make us happy. We saw and

heard and felt a hundred beauties which delight the soul and fill it with happy memories. We enjoyed most the fish we didn't catch.

KEEPING FIELD RECORDS.

By A. F. Gainer.

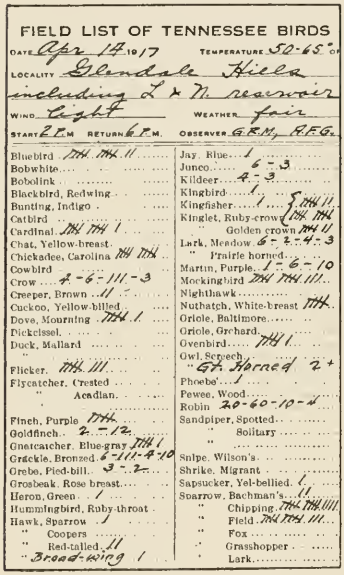
A detail in connection with bird study which is very generally accepted is the fact that we should keep systematic field notes and records of our observations. Just how to do this in the least irksome manner has been the cause of much thought and the subject of a number of articles on the subject.

The field notebook is used quite generally, but is objectionable, for the reason that it is more or less bulky, and for that reason is often left at home. Again we sometimes have so much respect for the neatness of its contents that we hesitate to scribble in it with a dull pencil, perhaps in the midst of a summer shower or a driving snow. Unless we submit to the expense and bulkiness of a loose-leaf notebook, we are unable to substitute new sheets for old should occasion arise.

After many years of systematic note keeping I have settled upon the card system of keeping field records and find it meets every need. Briefly, the idea is to have printed upon both sides of a 3x5 bristol board card the names of about 130 of the birds most often noted the year 'round. As shown by the illustration, there has been left below such species as the warblers, sparrows, etc., several blank lines for those which are rare and not ordinarily met, to be inserted in pencil should they be encountered. Sufficient space is left on the line behind each name to check off the number of individuals as they are met. Additional blank lines are also left at the end of the list for short notes, etc. The heading speaks for itself.

The cards are 3x5 in size, which dimensions are standard for index cards the country over. For this reason they will

fit in standard card index cases, which can be bought from thirty-five cents and upwards, or they can be filed in drawers of larger cases, other drawers of which have cards devoted



FIELD LIST OF TENNESSEE BIRDS

DATE Apr 14 1917 TEMPERATURE 50-65° C.

LOCALITY Glendale Field including L & N reservoir

WIND Light WEATHER fair

START 2 P.M. RETURN 6 P.M. OBSERVER GEM, HEG.

Bluebird ||||
Bobwhite
Bobolink
Blackbird, Redwing
Bunting, Indigo
Catbird
Cardinal |||| |
Chat, Yellow-breast
Chickadee, Carolina ||||
Cowbird
Crow 4-6-111-3
Creeper, Brown ||
Cuckoo, Yellow-billed
Dove, Mourning |||| |
Dickcissel
Duck, Mallard
"
Flicker ||||
Flycatcher, Crested
" Acadian.
Finch, Purple ||||
Goldfinch 2-12
Gnatcatcher, Blue-gray ||||
Grackle, Bronzed 6-111-4-10
Grebe, Pied-bill 3-2
Grosbeak, Rose breast
Heron, Green /
Hummingbird, Ruby-throat
Hawk, Sparrow /
" Coopers
" Red-tailed ||
" Broad-wing /
Jay, Blue /
Junco 6-3
Killdeer 4-3
Kingbird /
Kingfisher / ||
Kinglet, Ruby-crown |||| ||||
" Golden crown |||| ||
Lark, Meadow 6-2-4-3
" Prairie horned
Martin, Purple 1-6-10
Mockingbird |||| |||| |||
Nighthawk
Nuthatch, White-breast ||||
Oriole, Baltimore
Oriole, Orchard
Ovenbird |||| /
Owl, Screech
" Gt. Horned 2+
Phoebe /
Pewee, Wood
Robin 20-60-10-4
Sandpiper, Spotted
" Solitary
"
Snipe, Wilson's
Shrike, Migrant
Sapsucker, Yel-bellied. /
Sparrow, Bachman's ||
" Chipping |||| |||| ||||
" Field |||| |||| |||
" Fox
" Grasshopper
" Lark

Sparrow, Savannah 5
" Song
" Swamp
" Vesper 3
" White-crown /
" White-throat |||| |||| ||||
" |||| ||
Swallow, Bank
" Barn 3
" Cliff
" Tree /// +
" Rough-wing 10
Swift, Chimney
Tanager, Summer
" Scarlet
Titmouse, Tufted ////
Thrasher, Brown |||| |||| /
Thrush, Grey-cheek
" Olive-backed
" Hermit |||| /
" Wood //
" Water /
" Le. Water //
"
Towhee |||| //
Vireo, Red-eyed /
" White-eyed ///
" Warbling
" Yel.-throat
"
Warbler, Bay-breast
" Bl. & Wh ||||////
" Blue-wing /
" Blackburnian
" Blackpoll
" Bl.-thr. Blue
" " Green
" Cerulean
" Chestnut-sided
" Cape May

Warbler, Hooded ////
" Kentucky
" Md. Yel.-throat
" Myrtle |||| |||| ||||/
" Magnolia
" Nashville
" N. Parula
" Palm
" Pine
" Redstart
" Sycamore /
" Tennessee
" Yellow /
"
"
Wax wing, Cedar
Whippoorwill /
Woodpecker, Downy ||||
" Hairy ///
" Pileated //
" Red-head /
" Red-bellied |||| |||| ////
Wren, Bewicks ||||
" Carolina |||| ////
" Winter ////
"
Vulture, Black 1-2-12 ||
" Turkey /
Nuthatch, Red-br /
Bittern, Am /
Cormorant, D-cr 2
Loon /
Osprey /
All water birds noted on the reservoir
-74 species-

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to various subjects. Index cards may be bought with months printed on the tabs or they may be secured blank and the tabs written on according to the user's ideas.

On returning from a trip, file your card in the box or case under the current month and record its contents into your ledger, if you keep one, at your leisure. It is a very simple matter to "run down" your records of any particular species, since the name will be found in the same place on every card, and it takes but a few minutes to run through a year's records. Should your card become torn or soiled afield, the rewriting of it may be left for a rainy day with less pang of conscience than if your notes were recorded on the proverbial old envelope or other scrap of paper. I usually take a blank card along to record notes too bulky to put on the printed card, and the two can be filed together, both being dated. Nothing could be more convenient afield than to keep

a card with pencil in the front coat pocket, where it is so accessible that the matter of recording individuals becomes almost mechanical.

The cost of my cards printed on good white bristol board was $4.50 per thousand. Care must be exercised that the right sized type be used in order that a sufficient space be left available for making the records.

Members of the Tennessee Ornithological Society are using this system altogether and are enthusiastic over it. The user of course may carry out his "office records" in as great detail as he likes, the cards being offered merely as a firm basis for the development of more voluminous notes should the observer have the time.

Nashville, Tenn.

THE SAVING OF A POND, AND THE RESULTING BIRD LIST.

By Howard C. Brown.

One windy day during a heavy snowfall, in the spring of 1917, the telephone in my father's real estate office tingled. When answered, an excited woman began talking. Her name was Mrs. ———, and she had just been told by a person living near Schneider's Pond that someone was there cutting all of the willows. So she had phoned to my father as a real estate agent, to find out if he could tell her who owned the property, so that the cutting could be stopped at once. Further explanation for stopping the cutting of willows was quite essential, and it was speedily given.

"You see," she continued, "that place is a perfect rendezvous for birds, and it would be a shame to destroy it. I thought that if I could learn who the owner was, perhaps he would stop it. For it must be stopped, and at once."

My father not knowing the owner, but sufficiently interested in any project which would benefit the birds, proposed that they make a trip to the Pond at once, to have an interview with the chopper. So out into the snowstorm he went

after Mrs. ——— with his auto, and they made a trip to the scene of destruction. Great willows, which had been allowed the freedom of plenty of space for years, were being chopped off for the piteous bit of wood they would make. When arrived at the place, Mrs. ——— made at once for the chopper, and discovered that he was an old schoolmate of hers. But that made no difference. If they had not agreed in school, at least, there was a possibility that they could now. So she asked him whose authority he had for cutting the willows. He replied that the owner had given him permission to cut all the trees for the wood. Then she pleaded for the preservation of the trees, which of course meant the preservation of the Pond as well, and he became interested enough to stop work, to listen. "It is perfectly alive with birds at certain seasons of the year, and if the trees were cut, the Pond would dry up, the birds would forsake it, and we would only have a weed patch where we now have a Natural Bird Sanctuary. I am a member of the local Naturalist Club, and in the name of that organization which stands for the protection of Natural Beauty spots, and our wild life, I ask you to cease your cutting, until we can confer with the owner."

The owner was found to be a Mr. Smith, living at Monona, Iowa. So the chopper was finally prevailed upon to cease his action, for the present, and after making her way back to the car, dripping wet from the thickly falling flakes, she went home and wrote a letter at once to the owner. After this action, of which I knew nothing until it was all over, she felt that a big step was taken toward the preservation of a spot which deserved to be preserved, not alone from its natural beauty, for it had been used by many persons, unconscious of the beauty which was lurking near, as a dumping ground, but because of the many birds which visited the spot every spring and fall during the migration season.

It is no wonder that her enthusiasm was so great for the preservation of the spot, and that her indignation was well aroused, for the Pond, although small, had a slough on one side, a meadow on the other through which a creek made

its way, and houses on the other two sides. Only two blocks from the Illinois Central depot and Main Street, this little spot of not more than three acres was, it seemed, a favorite stopping point of all migrating birds. The varied conditions of the land about it gave to it a variety of bird life which I doubt is equalled by any place in the county of equal area.

So a letter was written to Mr. Smith telling him about the use the birds made of the place, and asking that he should stop the cutting of the trees at once, and give his permission to allow those members of the Naturalist Club, who would, help improve the general appearnce of the spot and make it a Bird Sanctuary. His reply was very favorable. He hadn't realized that it had any value as it was and merely thought that he would have it cleaned up. But with the letter from Mrs. ——— he changed his mind. Orders were given at once for the chopping to be stopped, and permission was readily granted for cleaning up the place and making it a Bird Sanctuary. In time, it was thought that the City Improvement might be able to buy the place, and then it would always remain a place of natural beauty, and a valuable asset to the bird student. At present all that was done was to place the project before the Califor Naturalist Club and to create an interest in the spot among all who were interested in birds.

For a number of meetings the Junior Nature Study Club of the city met at the Pond, and spent their time in hauling cans, old stoves, etc., out of the Pond, and taking them all to one place, where they would be covered with ashes. It would not take long, then, for the plants to cover the ashes, and stopping further dumping of rubbish in the Pond was attended to. A sign was at once ordered, which would be hung by chains from some of the willows which faced the railroad track near-by, so that all strangers coming into the city would be greeted by this sign, showing the enthusiasm of Charles City, Iowa, over bird-life. As yet the sign has not been hung, and there is a great deal to do, but we have hopes that the day will come when the Pond, with its immediate surroundings, may

become the property of the city and may be used as a Bird Sanctuary for all time to come. Its close location to the central portion of the city makes it a most desirable place to preserve for future time as a Sanctuary.

Early in the spring I began making trips to the Pond and keeping a list of my observations. And that others may know something of the variety of bird-life about it, I have here given a list of the birds identified within the two months of April and May, 1917. Several species which I observed a block or so in from the Pond, I have included in this list, as there are others which I did not list there, but which undoubtedly were there and missed. The goldfinches, for example, were migrating on May 27, and were observed in flocks of great numbers not far from the Pond, but I have never seen a goldfinch sufficiently near to include it on this list. Of course it must be borne in mind that other birds, which come later in the season, and the winter birds will not appear in this list. And when you consider that this is only the observations of two months, I think the reader will agree with me that the place is well worthy of preservation. The name has been changed from Schneider's Pond, named from an early owner, to the Willow Pond Bird Sanctuary. I have listed quite a number of species here which I have never listed before. The black tern is one of this class. Purple martins, two years ago during the migrating season in the spring, came in flocks and stayed for a few days about our store awnings on Main Street. The street was fairly alive with their chattering. Many started nests near the awnings, but when the awnings were rolled up and down the nests were destroyed, and all left in a few days. Never since that time have I seen any numbers here. Last year (1916) I only saw a few in the spring around the Illinois Central depot, and this year, for one day, I saw quite a number at the Pond; a day or so after I saw one, and have not seen one here since. Towhees I have never seen before this year, but have several listed this time; also the Florida Gallinule. The warblers were unusually numerous this year, as were also

the rails, oven-birds, and redstarts. The redstarts I had seen only a few of before this year, but they came in flocks to the Pond this year, and lingered for over a week. Of the kinglets I have found the Golden-crowned to be much the rarer, as my list will show. Bobolinks have been more numerous this year than last, and hummingbirds have been very rare. I listed my first one for 1917 on August 8th.

In the following list of birds identified at or near the Pond during the two months of April and May, 1917, an (x) merely indicates that the species was identified that day. Where the species is a new one, or one not so commonly found, or migrants, I have used the initial letter of an adjective to indicate the numbers, or in the case of rare species, I have given the number of individuals seen. Nighthawks are not rare, but for some reason I have never been able to see very many. Only the one at the Pond this year. The question mark inclosed in parenthesis (?) indicates that the species is uncertain. Many times my trips to the Pond were made at noon, or at some time when I had to hurry back. At such times I often caught fleeting glimpses of thrushes, swallows, etc., which I did not take the time to hunt the species of. Again, the swallows were so numerous that I did not bother to list them by individual species after the first three or four. Beyond these explanations I think the list is self-explanatory:

	List of Birds	April 10	April 27	April 28	May 1	May 2	May 5	May 6	May 10	May 11	May 12	May 13	May 15	May 16	May 22	May 23	May 24	May 25	May 27	May 31
1.	English Sparrow	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x		x
2.	Robin	x	x	x	x	x	x	x	x			x	x	x	x	x	nest	x		x
3.	Blue Jay	x	x		x	x	x	x			x	x			x	x				
4.	Bronzed Grackle	x	x	x	x		x	x	*m	x	x	x	x	x	x	x		x		x
5.	Catbird											x	3	x	x	x		x	x	n
6.	Northern Flicker		x		x	x	x	x	x	x	x	x			x	x				
7.	Meadowlark		x	x	x		x	x			x	x		x	x	x			x	
8.	Red-winged Blackbird		x		x	x	x	x	n	x	x	x	x	x	x	x	nest	x	x	n
9.	Phoebe			x				x												
10.	Mourning Dove				x	x	x	x	6		x	x	x	x	x	x	nest			x
11.	Red-headed Woodpecker							3				x								
12.	Slate-colored Junco	x																		
13.	Purple Martin		n			1														
14.	Ruby-crowned Kinglet		x	x	x		m	x	m	m	x	x								
15.	Golden-crowned Kinglet		x	x																
16.	Myrtle Warbler		s	m	x	x	x	m				x								
17.	White-throated Sparrow			x					s			x		x						
	Swallows (?)			x		x		x	x		x								x	u
18.	Brown Thrasher											x		x						
19.	Barn Swallow				x			x							x				x	
20.	Tree Swallow				x	x													x	
21.	Rusty Blackbird				x															
22.	Grinnell Water-Thrush				x						x	x		x	x		x			
23.	Chipping Sparrow					x	x		s			x								
	Hawk (?)						x													
24.	Song Sparrow							x				x				x				
25.	Veery Thrush																		x	
26.	Brown Creeper							x												
27.	Rose-breasted Grosbeak								1				x	x						x
28.	Little Green Heron								2											
29.	Olive-backed Thrush								3											
30.	Sora Rail								2		1	1			1	1				
31.	Yellow Warbler									2	x	x								
32.	House Wren										x	x		x						
33.	American Bittern										1	1								
34.	Crow										x	x								
35.	Black and White Warbler										1	1		x						
36.	Wilson Warbler										x	x		x	x					
37.	Chickadee											x								
38.	Western Meadowlark											x								
39.	Towhee											1	1			2				
40.	Killdeer											s								
41	Baltimore Oriole											1			x	x			x	
42.	Chimney Swift											x				x			x	x
43.	Bank Swallow											x								
44.	Belted Kingfisher											x		x	x	x				
45.	Md. Yellow-throat													x	x	x		m	m	f
46.	Conn. Warbler											x								
47.	White-rumped Sandpiper											x								
48.	Bobolink										x					x				
49.	Parula Warbler										1									
50.	Redstart												s	x		m				
51.	Magnolia Warbler												1	x						
52.	Black-poll Warbler													1						
53.	Chestnut-sided Warbler													1						
	Thrush (?)													x						x
54.	Downy Woodpecker													x	x					
55.	Black Tern														1	1	2			
56.	Wood Pewee														x	x			x	
57.	American Coot														1	2				
58.	Florida Gallinule														2					
59.	Least Bittern															1			2	
60.	Mourning Warbler															1				
61.	Oven-bird															x				
	Flycatcher (?)							x				x								
.	Nighthawk																			x

* M, many; n, numerous; s, several; f, few.

Charles City, Iowa.

WINTER BIRDS ABOUT WASHINGTON, D. C., 1916-1917.

By W. L. McAtee, E. A. Preble, and Alexander Wetmore.

After having committed to the mails our 1916 Christmas Bird Census of 40 species and 752 individuals (made December 27: see Bird Lore, XIX, 1917, p. 25), the writer succeeded in making (on December 30, 1916), a record so much better—in fact, the best winter day's list for the region—that it seems well to publish this also. At the same time we take the opportunity to present a list of other birds that have been seen near Washington this winter, with brief notes on the more interesting species.

Our trip of December 30, 1916, was from Mt. Vernon to Dyke, Va., taking us along the partly frozen Potomac, over wooded bluffs, and through clearings, farm lands, pineries, and river swamps. The day was partly cloudy, with a temature of +20° F. at 8 a. m. Observations were made between 9 a. m. and 5 p. m.

The species seen were: Herring Gull, 3; Hooded Merganser, 21; Canvas-back, 410; Golden-eye, 47; Ruddy Duck, 4; Bob-white, 16; Turkey Vulture, 8; Marsh Hawk, 1; Sharp-shinned Hawk, 1; Red-shouldered Hawk, 2; Kingfisher, 1; Hairy Woodpecker, 3; Downy Woodpecker, 4; Yellow-bellied Sapsucker, 8; Red-headed Woodpecker, 6; Red-bellied Woodpecker, 1; Flicker, 3; Blue Jay, 12; Crow, 134; Fish Crow, 6; Starling, 9; Meadowlark, 4; Purple Finch, 5; Red Crossbill, 2; White-winged Crossbill, 2; English Sparrow, 20; Goldfinch, 10; Savanna Sparrow, 3; White-throated Sparrow, 51; Tree Sparrow, 76; Field Sparrow, 4; Junco, 176; Song Sparrow, 7; Chewink, 4; Cardinal, 7; Migrant Shrike, 1; Myrtle Warbler, 3; Mocking Bird, 5; Carolina Wren, 7; Winter Wren, 2; Brown Creeper, 5; White-breasted Nuthatch, 2; Red-breasted Nuthatch, 14; Tufted Titmouse, 11;

* Names are in alphabetical order; responsibility for the list is equal.

Carolina Chickadee, 20; Golden-crowned Kinglet, 16; Hermit Thrush, 1; Bluebird, 9. Total, 48 species and 1167 individuals.

Crossbills had been seen so often that early in the winter local ornithologists had high hopes that an "invasion" of northern birds was due; however, no other boreal species have been seen, though red-breasted nuthatches have been much more numerous than usual. The first crossbills were seen December 10, 1916, near Ashburn, Va., by E. R. Kalmbach, D. C. Mabbott, and W. L. McAtee, one white-winged crossbill being seen with a flock of half a dozen red ones. White-wings were next seen at Woodridge, D. C., on December 14, by Mabbott. On December 24, Alexander Wetmore found a female at Four Mile Run, Virginia, and that same afternoon about forty of the same species were seen at Woodridge, D. C., by E. G. Holt, Mabbott, and Wetmore. On December 27, while making our Christmas Bird Census, the writers observed others of this same species. At Four Mile Run one was first seen as it flew past high in air, and later was followed and located in a clump of Virginia pines. Later the same day at Dyke, Virginia, Wetmore and A. K. Fisher found a flock of seven in some low pines, and afterward observed others in deciduous trees. At dusk four or five flew into some cedars on a hillside, where they prepared to roost with the juncos. One of these crossbills was flushed from some low weeds when it was almost dark. On December 30, near Mt. Vernon, we saw two red and two white-winged crossbills, in some low dense pines that had overgrown an abandoned orchard. Occasional birds have been observed since the first of the year, but the wave of migration among them seemed to pass during the last week of December, and since that time the bulk of the crossbills appear to have betaken themselves elsewhere.

The ducks noted in our list were seen on the Potomac, where the birds were feeding in the channels and other open places amongst the ice. On December 30 yellow-bellied sapsuckers seemed almost common, and somewhat to our sur-

prise were attracted readily by "squeaking." Three Savanna sparrows were noted in a grassy field. Both these birds usually are rare in winter in this region.

Starlings have been fairly common in the vicinity of Washington this winter, and were seen on nearly every trip afield. They frequented the river flats and fields, mingling freely with crows, an act of familiarity that few native birds dare attempt.

On January 7, 1917, we found myrtle warblers common near Hunter, Virginia, in woods heavily grown up to underbrush, in which was an exceptional amount of holly.

Other species of birds additional to the forty-eight above listed that have been credibly reported in the Washington region during the winter (December 1, 1916, to February 15, 1917), include the following. Unless otherwise stated the observations have been made by one or more of the authors. No attempt has been made to use all known dates of occurrence, and certain records published in Bird-Lore for January-February, 1917, have been disregarded. All the localities named are within fifteen miles of Washington.

American Merganser.—Mt. Vernon, Va., January 20, 1917, four observed.

Mallard.—Dyke, Va., January 25, 1917, eight.

Black Duck.—Dyke, Va., December 27, 1916, three.

Buffle-head.—New Alexandria, Va., December 23, 1916, one (J. P. Young, Bird-Lore, 1917, p. 25).

Great Blue Heron.—Four Mile Run, Va., January 14, 1917, one; Dogue Creek, Va., January 20, one.

American Coot.—Dyke, Va., December 2, 1916, several recently killed were seen at a hunter's cabin.

Wilson Snipe.—Dyke, Va., December 2, 1916; remains of one killed, probably the preceding day, observed at a hunter's cabin.

Killdeer.—Arlington, Va., December 17, 1916, one; Brandywine, Md., December 2, five; Four Mile Run, Va., December 10, common; one seen December 24. Killdeer usually winter on the tidal basin at the mouth of Four Mile Run, but a heavy freeze drove them away this year.

Ruffed Grouse.—Between Contee and Bowie, Md., January 28, 1917, one.

Mourning Dove.—Snowden's, Va., January 7, 1917, five; others have been reported.

Cooper's Hawk.—Berwyn, Md., December 23, 1916, one; Bowie, Md., December 25, three.

Red-tailed Hawk.—Ashburn, Va., December 10, 1916.

Broad-winged Hawk.—Brandywine, Md., December 3, 1916; Ashburn, Va., December 10.

Duck Hawk.—At least one has been seen on the tower of the Post Office Department Building this winter, as has usually been the case during the past few years.

Sparrow Hawk.—Ashburn, Va., December 10, 1916, two; Arlington, Va., January 1, 1917 (Miss May T. Cooke).

Barn Owl.—One seen at dusk flying above Pennsylvania Avenue, January 3, 1917; two in the northwest tower of the Smithsonian Institution, January 8, 1917.

Barred Owl.—Arlington, Va., two (probably a pair), December 27, 1916; Dyke, Va., 3, same date; Plummers Island, Md., February 1, 1917, two.

Saw-whet Owl.—Silver Spring, Md., one, November 30, 1916 (A. K. Fisher).

Screech Owl.—Washington, D. C., December 23, 1916, two (J. P. Young, Bird Lore, 1917, p. 25); Cleveland Park, D. C. February 14, 1917, one.

Prairie Horned Lark.—Ashburn, Va., December 10, 1916, two; between Contee and Bowie, Md., January 28, 1917, twenty-five.

Red-winged Blackbird.—Berwyn, Md., December 23, 1916, three (E. R. Kalmbach and I. N. Gabrielson, Bird Lore, 1917, p. 24).

Rusty Blackbird.—Four Mile Run, Va., December 10, 1916, one; Arlington, Va., December 27, one (probably a cripple).

Crow Blackbird.—Brandywine, Md., December 2, 1916, many thousands in flying flocks; Dyke, Va., December 27, nine; Washington, D. C., Woodridge, D. C. January 27 (D. C. Mabbott).

Pine Siskin.—Four Mile Run, Va., December 3, 10 and 24, 1916, small flocks in Virginia pines.

Chipping Sparrow.—Ashburn, Va., December 10, 1916, one.

Swamp Sparrow.—Arlington, Va., December 27, 1916, five.

Fox Sparrow.—Ashburn, Va., December 10, 1916; others were reported in the vicinity of Washington at various times during December.

Cedarbird.—Ashburn, Va., December 10, 1916.

Cape May Warbler.—A living bird caught during a snow storm on December 16, 1916, was brought to Dr. C. W. Richmond at the U. S. National Museum (Auk, 1917, p. 343).

Pipit.—New Alexandria, Va., December 23, 1916, one (J. P. Young,

Bird Lore, 1917, p. 26). Though this bird is considered as a winter resident the earliest recorded spring date is February 16, 1908.

Ruby-crowned Kinglet.—Four Mile Run, Va., December 27, 1916, two.

Blue-gray Gnatcatcher.—Arlington, Va., January 1, 1917, one (Miss May T. Cooke); the earliest recorded spring date is March 30, 1907.

Robin.—January 3, 1917, one (H. H. T. Jackson). A robin frequented the holly trees in the Smithsonian Grounds during the first week in February. The species arrived in large numbers from the South soon after the middle of February.

The species observed by the authors on December 30, 1916, together with those noted at other times by various observers make a total of 81 species that have been seen in the vicinity during the past winter. Doubtless others have been present, but have been overlooked.

Referring to the District of Columbia list (Cooke, Proc. Biol. Soc. Washington, XXI, 1908, pp. 107-118), we find 109 species which may be considered as winter residents, taking the dates used by us (December 1-February 15), as a basis. Of these Cooke lists 43 species as winter residents. The present list includes all of these latter except 7. One of them, the Wild Turkey, is now practically extirpated as a District species. Two others are rare in winter, while the other three are seldom found here at any season.

Of the entire number of birds observed this winter, only a few can be considered as rare species about the District of Columbia. Those best entitled to be so considered are the Ruffed Grouse, Saw-whet Owl, White-winged and Red Crossbills, and the Pipit. The Blue-gray Gnatcatcher, a common summer resident, is now first added to the number that have been found in winter; the Myrtle Warbler and Mourning Dove are among the rarer residents at this season. The Cape May Warbler is of course only of accidental occurrence at this time.

ANOTHER UNUSUAL LAYING OF THE FLICKER.

(*Colaptes auratus luteus.*)

BY B. R. BALES, M.D.

The records of the laying of a large number of eggs by the Flicker have always been of great interest to me, and I had often determined, should the occasion present itself, to try to "break the record." Not until the present year did I find a nest favorable for observation. On May 2d, 1917, my son and I found a nest, which consisted of a hole, excavated by the birds, but six feet from the ground, in a dead limb of an apple tree, which was standing in an orchard, some distance from the road, and in a place not likely to be disturbed by inquisitive boys.

On the date discovered, it contained one egg. It was again examined on May 4th, at which time there were three eggs in the nest, two of which were taken and one left in the nest for a "nest egg." Each day thereafter, one egg was taken, leaving one in the nest.

On May 10th, a "nest egg" was left as usual, but when the nest was examined on the 11th, the "nest egg" was gone, but the bird was seen about the tree. To facilitate the removal of the eggs quickly and to avoid disturbing the birds by being about the tree for any length of time, we had removed the top from the stub wherein the nest was located, thus making a rather large hole, and a skulking crow, seen in the neighborhood of the tree, could probably have told us of the fate of the "nest egg."

On May 13th, we noticed the bird near a natural cavity in the living wood in the same tree, but about ten feet higher than the original nest. May 14th, we cut out a block of wood near the base of the cavity, and found it to contain three eggs, two of which were taken, again leaving a "nest egg."

Each day thereafter, one egg was taken and one left, until May 26th, when my son (who did the climbing) discov-

ered three eggs in the nest instead of the customary two. He was sure that there had never been more than two in the nest since May 14th, but it is possible and very like that the extra egg was laid on the 11th and had rolled to one side of the cavity or had been covered by the debris at the bottom, and not discovered until this date, as it is very unlikely that the bird laid two eggs in one day.

One egg was laid each day until June 11th, when examination revealed only the "nest egg." Each day for the three following days, the nest was examined, but no new eggs were found, during which time the bird was incubating and was always found on the nest.

This egg was taken, as we judged that the bird had finished laying. The measurements of the eggs are as follows:—

May 4—No. 1—1.03x.86.
May 4—No. 2—1.04x.85.
May 5—No. 3—1.03x.84.
May 6—No. 4—1.05x.81.
May 7—No. 5—1.07x.83.
May 8—No. 6—1.05x.84.
May 9—No. 7—1.07x.83.
May 10—No. 8—1.09x.84.
May 10—No. 9—"Nest egg," which disappeared.
May 14—No. 10—1.07x.82.
May 14—No. 11—1.05x.83.
May 15—No. 12—1.06x.85.
May 16—No. 13—1.08x.84.
May 17—No. 14—1.05x.84.
May 18—No. 15—1.02x.82.
May 19—No. 16—1.05x.84.
May 20—No. 17—1.08x.84.
May 21—No. 18—1.04x.86.
May 22—No. 19—1.04x.84. Weight—112 grains Av.
May 23—No. 20—1.07x.84. Weight—115 grains Av.
May 24—No. 21—1.06x.23. Weight—111 grains Av.
May 25—No. 22—1.03x.82. Weight—112 grains Av.
May 26—No. 23—1.07x.85. Weight—115 grains Av.
May 26—No. 24—1.01x.84. Weight—105 grains Av.
May 27—No. 25—1.08x.84. Weight—116 grains Av.

May 28—No. 26—1.06x.84. Weight—110 grains Av.
May 29—No. 27—1.08x.87. Weight—120 grains Av.
May 30—No. 28—1.03x.85. Weight—110 grains Av.
May 31—No. 29—1.07x.85. Weight—115 grains Av.
June 1—No. 30—1.06x.85. Weight—113 grains Av.
June 2—No. 31—1.03x.83. Weight—103 grains Av.
June 3—No. 32—1.08x.86. Weight—118 grains Av.
June 4—No. 33—1.07x.85. Weight—116 grains Av.
June 5—No. 34—1.09x.86. Weight—120 grains Av.
June 6—No. 35—1.09x.86. Weight—118 grains Av.
June 7—No. 36—1.06x.85. Weight—116 grains Av.
June 8—No. 37—1.06x.84. Weight—114 grains Av.
June 9—No. 38—1.09x.85. Weight—114 grains Av.
June 10—No. 39—1.05x.82. Weight—104 grains Av.
Summary:—
Number of eggs laid—39.
Number of days laying—39.
Lightest egg—104 grains.
Heaviest egg—120 grains.
Average weight of 21 eggs—113 grains.
Total average weight of 39 eggs—$10^{1}/_{10}$ ounces av.

It will be noted that, with the exception of the last egg laid (and it no doubt lost some weight through incubation), the eggs averaged a slight increase in size and weight during the latter part of the time the eggs were laid, rather than a decrease, as would naturally be expected. However, the uniformity in size is rather remarkable, varying in the long diameter between 1.02 and 1.09, and in the short diameter, between .81 and .87.

Wishing to ascertain how near we came to "breaking the record," a letter from Frank L. Burns of Berwyn, Pa., who is probably the greatest living authority on the Flicker, gave us the information in regard to sets of the same size, or larger, as follows:—

Vermont—39 eggs and young (15+8+8 eggs +8 young) —Oologist, Utica, N. Y., Vol. I, pp. 56.

Texas—40 eggs in 40 days, no nest egg—Scheer, Oologist, Vol. XI, pp. 55.

North Carolina—48 eggs in 65 days, no nest egg—Armstrong Mss.

Massachusetts—71 eggs in 73 days, nest egg—Phillips, Young Oologist, Vol. I, pp. 26.

Thus it will be seen that while we did not "break the record," we were equalled by one, and came within three of the largest number taken.

The behavior of the bird was practically the same at all times; almost every time we visited the nest, she was in the nesting hole, but flew to a nearby tree and "sang" to us while we were there. On one or two occasions, she flew to the tree while my son was climbing to the nest, but flew away before he had reached the nesting hole.

It would be interesting to know just how many insects were consumed during the period of laying, to nourish the bird, for lime for the shells and to furnish ten and one-tenth ounces, avoirdupois, of eggs, which is considerably more than the weight of the bird itself.

Circleville, Ohio.

GENERAL NOTES

THE FLORIDA GALLINULE NEAR WASHINGTON, D. C.

On September 4, 1917, I purchased an immature female Florida Gallinule (*Gallinula galeata*) in the Washington Center Market that, from the condition of the blood in the larger vessels, and the state of the viscera, must have been killed on the preceding day. Though no definite locality was given it is believed that this bird was shot nearby within the limits used in citing records for the District Fauna. There are few notes on the occurrence of the Florida Gallinule in this vicinity, though it is supposed that it may breed rarely in the more secluded marshes.

ALEXANDER WETMORE.

Biological Survey, Washington, D. C.

A CORRECTION.

In my paper, entitled "Some Notes on the Birds of Rock Canyon, Arizona," which appeared in the June, 1917, number of the Wilson Bulletin, there are two errors which have been courteously brought to my attention by Mr. Harry S. Swarth of the Museum of Vertebrate Zoölogy, Berkeley, California.

The Rillito River (or Creek) is frequently referred to as the Santa Rita River. My use of the latter name was the result of a mere assumption that the name I heard in daily use by the Mexicans and others was the correct one.

Also, on page 68, the record of the Mexican Black Hawk (*Urubitinga anthracina*) should be withdrawn from the list, because of the rarity of the species in Arizona, and the lack of specimen evidence with which to confirm the present occurrence. The great similarity between this species and *Buteo abbreviatus* renders visual identification especially difficult, and while the specimen noted may have been either of these two, it seems better to drop the record altogether.

My appreciation is due Mr. Swarth for his courtesy and interest in calling the above to my attention.

F. C. LINCOLN.

Denver, Colo.

INCIDENTAL RECORDS FOR 1917.
(Obtained at Rantoul, Ill.)

The most gratifying record of this past summer's season is that of the Yellow-headed Blackbird. It was obtained by no effort.

On Sunday morning, May 23, while we were at the breakfast table, and extraordinary note called our attention to a Yellow-headed Blackbird perched on a post of the yard fence. Later in the day another bird of the same kind was observed, and both stayed near the house during the entire day, but after that were not seen. Another pleasure was the repetition of the Black Terns. They had been recorded in 1916, and this spring they were observed on May 14 and May 22. The latter day they followed the men working in the fields, often touching the ground to obtain the food they were seeking.

The Herring Gulls have been observed several times the past season, namely: January 5, May 10, 11 and 12, and June 23, and October. The June record would point to the fact that they were nesting near, as there were but two birds observed. The May records were of large numbers, observed in the fields that were being cultivated. No doubt the birds were gathering food from the fresh earth.

Last winter was enlivened by continued presence of Redpolls and Cedar Waxwings. The Redpolls have not been in this vicinity for many years and the Waxwings but twice during the last fifteen years.

George E. Ekblaw.

Rantoul, Ill.

A FEW INTERESTING SPRING MIGRATION RECORDS FROM LINCOLN, NEBRASKA.

During the spring of 1917 I was in Lincoln, Nebraska, for a short time on vacation, and while there secured a few interesting migration records for that locality. The most important of these are listed below. Most of them are substantiated by specimens, taken at the time, which are deposited in my private collection at Lincoln.

Lobipes lobatus (Linnaeus).—Northern Phalarope.

On May 10, a single female of this species was taken along Oak Creek in the neighborhood of Capital Beach. Wilson Phalaropes (*Steganopus tricolor*) were abundant during the whole period of migration as usual, but I saw only the one individual of the present species.

Vireosylva philadelphica (Cassin).—Philadelphia Vireo.

I secured a female Philadelphia Vireo May 16 in the strip of woodland bordering Salt Creek between Lincoln and Jamaica. The species has been observed but rarely in Nebraska and, so far as I know, there are no other specimens from the state extant.

There has been some diffrence of opinion about the song of this

species, but the bird I obtained had the song of *V. olivacea* with little variation, no more than I have observed among various individuals of the latter species.

Protonotaria citrea (Boddaert).—Prothonotary Warbler.

There is one record for the Prothonotary Warbler at Lincoln. I am now able to supplement this with another on the basis of a fine male which I collected on May 14, from a willow overhanging Salt Creek south of Lincoln. The species is apparently much rarer now in eastern Nebraska than in past years, a fact which makes this westerly record of particular interest.

Dendroica castanea (Wilson).—Bay-breasted Warbler.

The Bay-breasted Warbler has never been common in Nebraska. Several years ago I took a single specimen at Lincoln, and on May 17 of the present year I secured another, both males. This year's capture was found in a low tree at the edge of an open field, in the company of a flock of Clay-colored Sparrows (*Spizella pallida*), where it was, to say the least, conspicuous.

Dendroica palmarum (Gmelin).—Palm Warbler.

Palm Warblers seem to have visited eastern Nebraska in greater numbers, during the last few years, than formerly, and have been noted by various observers. I have records of two occurrences at Lincoln this spring, the first a single male which I saw and secured on May 8 along Steven's Creek, and the second a bird which I saw, but did not take, along Oak Creek.

Polioptila caerulea (Linnaeus).—Blue-gray Gnatcatcher.

Although rather common along the Missouri River in eastern Nebraska, the Blue-gray Gnatcatcher is rather rare in the vicinity of Lincoln, according to my observations. My first record for that locality is a male, which I secured on May 14.

Hylocichla fuscescens salicicola (Ridgway).—Willow Thrush.

I noted Willow Thrushes a number of times at Lincoln in May of this year and secured a male specimen on the 14th of that month. The species was commoner than usual this year, I believe.

JOHN T. ZIMMER.

Port Moresby, New Guinea, Sept. 25, 1917.

BERT HEALD BAILEY.

Scientific and collegiate circles in Iowa were deeply affected when the newspapers announced the death of Professor B. H. Bailey, of Coe College. Perhaps most of his associates had no realization of the seriousness of his sickness, since he was confined to his bed only for a short time.

Dr. Bailey was in the prime of his usefulness and scientific activity. At the time of his death he had just completed a year's leave of absence from Coe College, which he had spent at the State University of Iowa. Here he had pursued two lines of research. He was gathering data toward a complete and revised catalog of the mammals of the State. And he was also completing a study on the food and distribution of the raptorial birds of the State, upon which he had been engaged for a long period of time; a study which grew out of his work for the Coe College museum.

The museum, of which Dr. Bailey was the Curator, is, perhaps his greatest contribution along scientific lines. While Drs. Frederick Starr and Seth E. Meek preceded Dr. Bailey in gathering the nucleus, the bulk of the collecting, the organization, and the arrangement on modern lines, were the work of the latter. This museum is, no doubt, the second largest in the State. And while a full description of it would be entirely fitting in any account of Dr. Bailey's life work, we may simply say that it is especially strong in birds, the group which most interested the Curator.

Besides containing a good representation of birds native to the State, it possesses a very good collection of birds from British Honduras, which is said to be the third largest collection of birds from this region in this country. Part of this collection was presented by one of the graduating classes of the College, and the remainder was collected by Dr. Bailey himself.

During the campaign for a five-year closed season on quail and prairie chickens in Iowa in the spring of 1917, Dr. Bailey went to Des Moines on urgent call to assist in the plea to the legislature to pass the bill giving a continuous protection to these birds for this length of time. His name should always be connected with the successful outcome of this piece of conservation legislation in Iowa.

By no means the least of Dr. Bailey's life work was the intimate and sympathetic relation with his students. Such friendship was, no doubt, the incentive for many of the contributions which came to the museum from the students and alumni. For some time also he had been the Senior Class Advisor, and was thus brought into close personal contact with all of the graduates of the college. He was deeply interested in the religious

and social life of the students; in the work of the Y. M. C. A., and all missionary enterprises, both local and foreign.

It is most difficult to speak of him personally, because of the difficulty of doing so adequately. Those who knew Dr. Bailey must have been impressed above all by his kind and gentle manner, his extreme modesty, and upright manhood. I have on various occasions observed the warmth of friendship arising from a single meeting. He inspired confidence and good will.

The following eulogy is quoted from a brief tribute in the Coe College Courier at the time of his death:

"Professor Bailey was a prince among men, outstanding and apart in the simplicity, genuineness, and the essential goodness of his character; as gentle in manner as the birds he loved, and yet without compromise on questions of principle. Measured by the loftiest Christian standards he deserved to be called great, for truly he was 'the servant of all.'"

Bert Heald Bailey was born on May 2, 1875, at Farley, Dubuque County, Iowa. His parents were Rev. Turner S. Bailey, D.D., and Helen Mar (Gee) Bailey. As a babe he was taken by his parents to Ohio,, but they returned in 1877 to Carroll, Iowa. In 1887 the family removed to Cedar Rapids, where he grew to manhood. His schooling began in Carroll, and was continued in Cedar Rapids until 1890. From 1890 to 1893 he attended Coe Academy. Of his four undergraduate years three were spent at Coe College and one at the State University, he being graduated, however, from the former institution. In 1900 he graduated from Rush Medical College. In the same year he received the master's degree from Coe College, for a thesis in the bacteriological field. Following this graduation he entered the faculty of Coe College as Head of the Department of Zoölogy, and also became the Curator of the Museum.

During the year preceding his death he held the Senior Fellowship at the University of Iowa, and was here bringing together the results of his researches, especially on the food and distribution of the hawks and owls of the State; and this work was to be the basis of a thesis for the doctor's degree. In the spring of the year he became afflicted with a malady which his physicians were unable to diagnose. This depressing uncertainty continued until a few days before his death, which occurred on June 22, 1917. The cause of death was an abcess of the spleen. The deceased is survived by his widow and three daughters.

He was a member of the American Association for the Advancement of Science, of the American Ornithologist's Union (1913), of the Wilson Ornithological Club (1913), of the American Associa-

tion of Museums, and a Fellow of the Iowa Academy of Science (1900 and 1911).

It is not certain that all of his publications are listed below; but in addition to these he furnished many facts for the "Birds of Iowa," by Dr. R. M. Anderson.

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T. C. STEPHENS.

Sioux City, Iowa.

THE ANNUAL MEETING

Our affiliation with the American Association for the Advancement of Science makes it advisable for us to hold our annual meeting with this Association when its meetings are held within our territory. Therefore the executive board has decided to hold the coming annual meeting of the Wilson Ornithological Club in Pittsburg on January 1 and 2, 1918, these being the dates when the largest number of members would be able to attend. There is good prospect of an interesting list of papers and a good attendance. Members and others who are planning to attend these meetings should also plan to present something from their studies and experiences. One feature it is proposed to introduce is a symposium upon the effect of the exceptional weather conditions of the year upon the bird life of the region which we regard as peculiarly ours.

The place of meeting will be 304 State Hall, University of Pittsburg. The general headquarters will be Hotel Schenley.

Titles of papers, with a brief abstract and statement of the time desired for presentation, should be mailed to the secretary, G. A. Abbott, Grosse Pointe Shores, Mich., at as early a date as possible, so that the program may be arranged to the best advantage.

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and THE NEBRASKA ORNITHOLOGISTS' UNION

(In Affiliation)

No. 99

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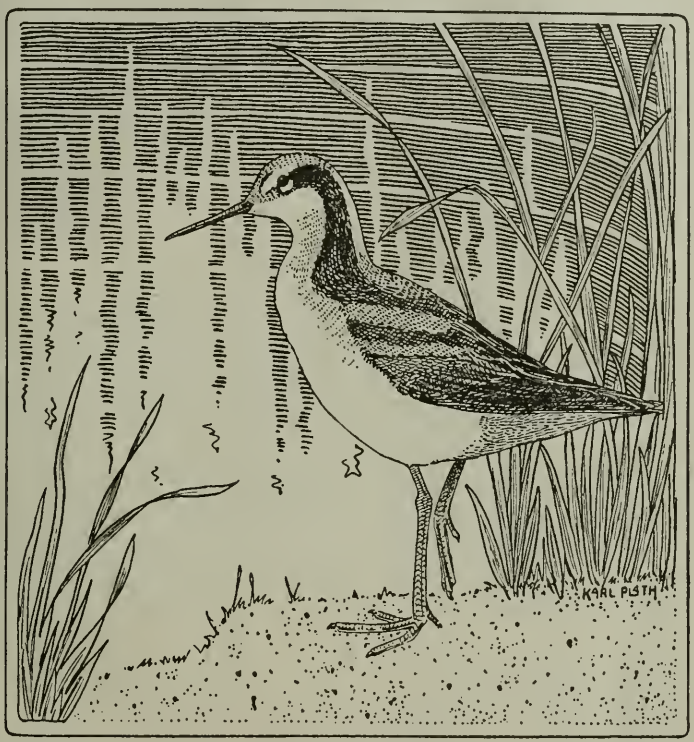

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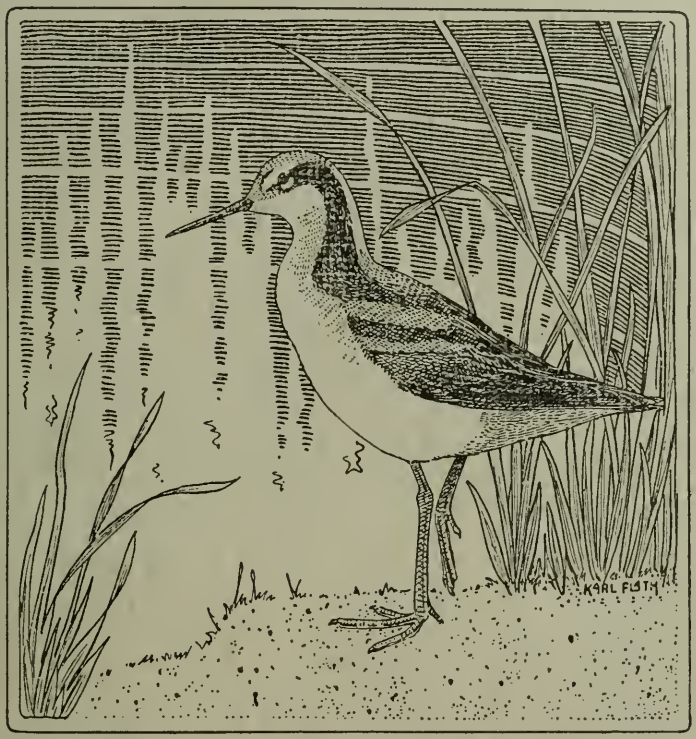

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